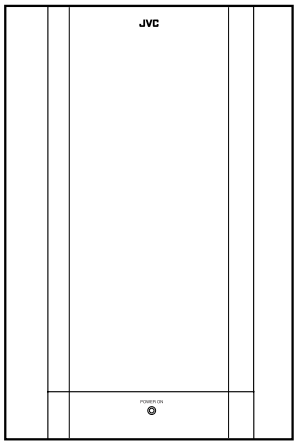
JVC

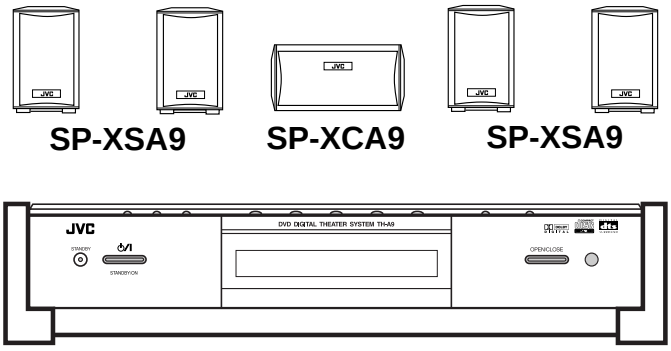
DVD DIGITAL THEATER SYSTEM

TH-A9

Consists of XV-THA9, SP-PWA9, SP-XCA9, and SP-XSA9

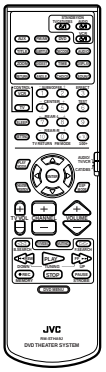


SP-PWA9



SP-XSA9 **SP-XCA9** **SP-XSA9**

XV-THA9



DVD VIDEO™ Video CD COMPACT disc DIGITAL VIDEO COMPACT disc DIGITAL AUDIO DOLBY DIGITAL DIGITAL dts SURROUND

INSTRUCTIONS

For Customer Use:

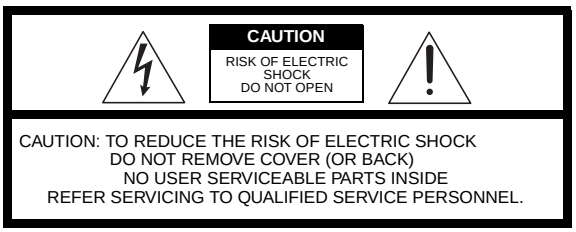
Enter below the Model No. and Serial No. which are located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No. _____

Serial No. _____

LVT0562-002A
[J]

Warnings, Cautions and Other


CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For U.S.A.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Caution — POWER switch!

Disconnect the mains plug to shut the power off completely. The POWER switch in any position does not disconnect the mains line. The power can be remote controlled.

IMPORTANT FOR LASER PRODUCTS

1. CLASS 1 LASER PRODUCT
2. **DANGER:** Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. **CAUTION:** Do not open the top cover. There are no user serviceable parts inside the unit; leave all servicing to qualitied service personnel.

CAUTION

To reduce the risk of electrical shocks, fire, etc.:

1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

Table of Contents

Getting Started 2
- Important cautions 2
- Safety precautions 2
- Checking the supplied accessories 2

System outline 3

Installation 4
- To hang satellite speakers from the wall 4

About discs 5
- Playable disc types 5
- Disc structure 5
- Video CDs with Playback Control function 5

Connections 6
- Connecting the FM and AM antennas 6
- Connecting the powered sub-woofer 6
- Connecting the TV 6
- Connecting the TV with the component video input jacks 7
- Connecting speakers 8
- Connecting an audio component 9
- Connecting the power cord 10
- Putting batteries in the remote control 10

Parts Identification 11

Principles of operation 14
- Operation with the remote control 14
- On-screen displays 15
- Preventing screen burn-out with the screen saver [SCREEN SAVER] 16

Basic operations 17
- To turn the system power supply ON and OFF (standby) 17
- To turn TV power ON and OFF 17
- Adjusting volume [VOLUME] 17
- Sub-woofer volume control and phase setting 18
- Muting the sound [MUTING] 18
- Selecting the source to play 18
- Changing the decode mode [DECODE] 19
- Audio channel display indicator 19
- Using the Sleep Timer [SLEEP] 20
- Using the DSP Modes [DSP MODE] 20

Using the DVD player 22
- To turn on the system and TV 22
- To insert a disc 22
- To play a disc 23
- Pausing 24
- Fast forward and backward 24
- Locating the beginning 24
- Resuming playback 25
- Selecting playback from the DVD menu 25
- Selecting the location to view from the Video CD menu 26
- To specify the title, chapter, or track number for playback 26
- To play from the beginning of a title, chapter, or track 27
- To specify the chapter number for playback [CHAP. SEARCH] 27
- To specify the time for playback [TIME SEARCH] 28
- To select the screen for playback from the digest screen [DIGEST] 29
- To advance the picture one frame at a time 29
- Slow-Motion Playback [SLOW] 30
- To display Continuous Photos [STROBE] 30
- Zooming a scene [ZOOM] 31
- Changing the Subtitle Language [SUBTITLE] 31
- Changing the audio language or sound [AUDIO] 32
- Changing the audio channel [AUDIO] 32
- Viewing from Multiple Angles [ANGLE] 33
- Selecting the Picture Character [THEATER POSITION] 34
- Repeating a current title, chapter or track, or all tracks [REPEAT] 34
- Repeating a desired part [A-B REPEAT] 35
- Programming the Playing Order [PROGRAM] 36
- Random Play [RANDOM] 37
- To check the DVD function status 37
- To check the disc information 38
- To check the time information 38

Receiving radio broadcasts 40
- Tuning in stations manually 40
- Using preset tuning 40
- Selecting the FM reception mode 41
- Beat cut 41

Preference settings 42
- Using the preference setting menus 42

LANGUAGE MENU settings 43
- Choosing menu language 43
- Choosing audio language 43
- Choosing subtitle language 43
- Choosing on-screen language 43

DISPLAY MENU settings 44
- Select monitor type 44
- Screen saver settings 44
- On-screen guide settings 44

SYSTEM MENU setting 45
- AUTO STANDBY 45
- RESUME 45
- AV COMPULINK MODE 45

Limiting playback by children 46
- To set Parental Lock for the first time [PARENTAL LOCK] 46
- To temporarily release the Parental lock 47

Amplifier settings 48
- Basic operation for setting amplifier 48
- Setting balance 48
- Setting tone 49
- Setting speaker size 49
- Adjusting delay time 49
- Adjusting crossover 50
- Adjusting LFE attenuator 50
- Adjusting dynamic range 50

Sound settings 51
- Adjusting sub-woofer level 51
- Adjusting speaker level 51
- Adjusting DSP effect 52

AV COMPU LINK remote control system 53
- Connection and setup 53
- Operation 54

Operating Other Manufacturers' Video Equipment 55

Care and handling of discs 57
- How to handle discs 57

Troubleshooting 58

Specifications 59

Getting Started

Important cautions

Installation of the unit
- Select a place which is level, dry and neither too hot nor too cold between 5°C and 35°C (41°F and 95°F).
- Leave sufficient distance between the unit and the TV.
- Do not use the unit in a place subject to vibrations.

Power cord
- Do not handle the power cord with wet hands!
- A small amount of power 1.3 W is always consumed while the power cord is connected to the wall outlet. (center unit only)
- When unplugging the unit from the wall outlet, always pull the plug, not the power cord.

To prevent malfunction of the unit
- There are no user-serviceable parts inside. If anything goes wrong, unplug the power cord and consult your dealer.
- Do not insert any metallic object into the unit.
- Do not use any non-standard shape disc available on the market, because it may damage the unit.
- Do not use a disc with tape, seals, or paste on it, because damage to the unit may result.

Note about the copyguard system
- The DVD disc is protected by the copyguard system. When you connect the unit to your VCR directly, the copyguard system activates and the picture may not be played back correctly.

Safety precautions

Avoid moisture, water and dust
Do not place your unit in moist or dusty places.

Avoid high temperatures
Do not expose the unit to direct sunlight or place it near a heating device.

When you're away
When away on travel or otherwise for an extended period of time, remove the plug from the wall outlet.

Do not block the vents
Blocking the vents may damage the unit.

Care of the cabinet
When cleaning the unit, use a soft cloth and follow the relevant instructions on the use of chemically-coated cloths. Do not use benzene, thinner or other organic solvents and disinfectants. These may cause deformation or discoloring.

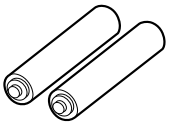
If water gets inside the unit
Turn off the power switch and remove the plug from the wall outlet, then call the store where you made your purchase. Using the unit in this state may cause a fire or electrical shock.

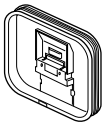
Avoid getting your hand caught in the disc cover
Getting caught may injure your hand.

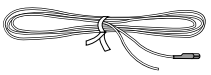
Checking the supplied accessories

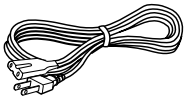
Check to be sure you have all of the following items, which are supplied with the unit.
The number in the parentheses indicates quantity of the pieces supplied.

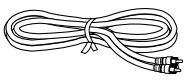
Remote control (1)

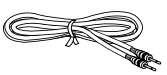

Batteries (2)

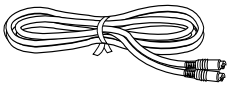

AM Loop Antenna (1)

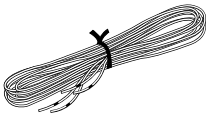

FM Antenna (1)

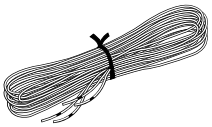

AC Power Cord (1)

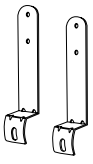

Video Cable (1)

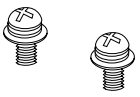

Compulink Cord (1)


System Cable (1)


Speaker Cord 5 m (16.4 ft) (3)


Speaker Cord 10m (32.8 ft) (2)

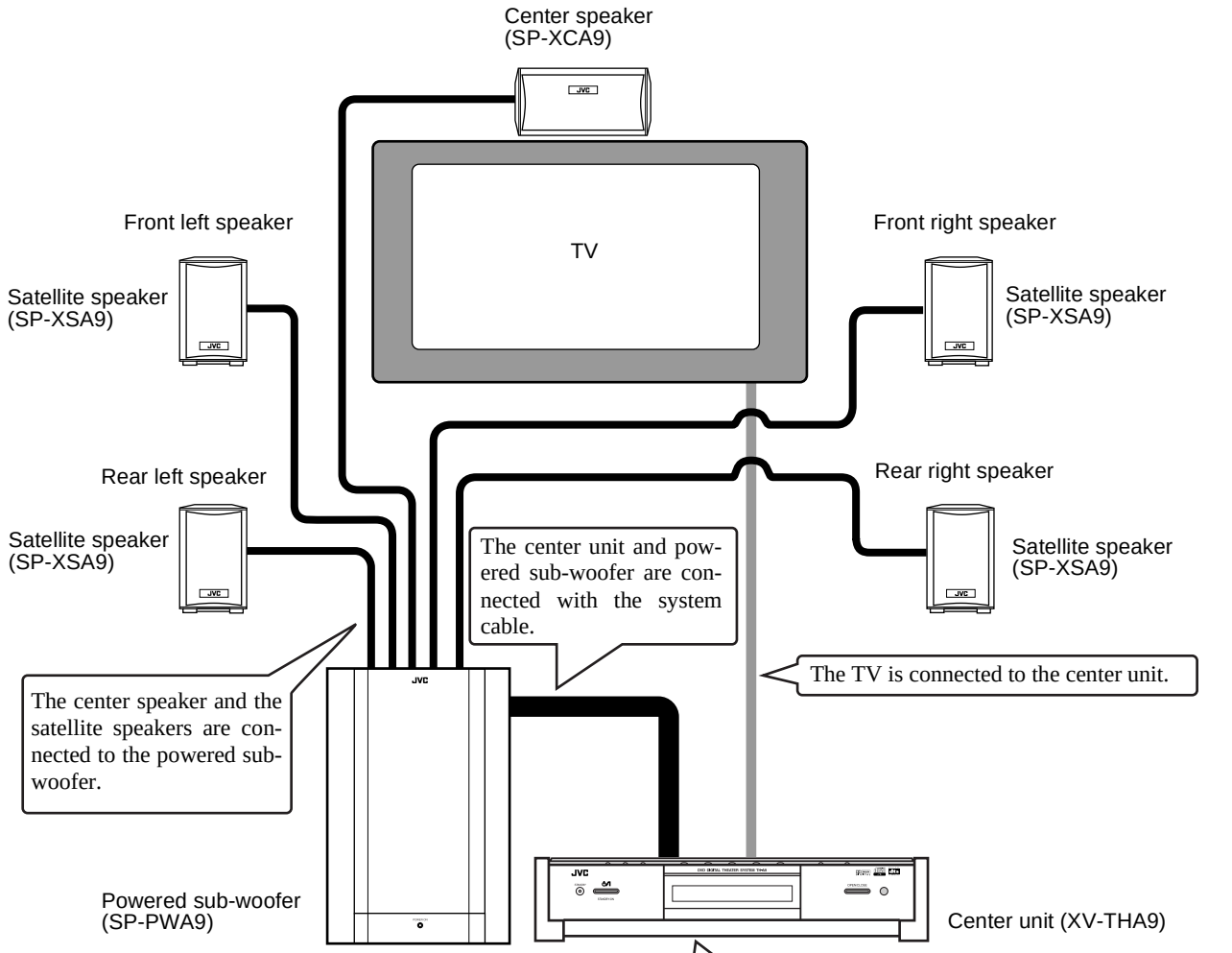

Satellite speaker wall bracket (2)*

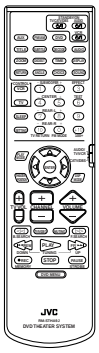

Screws (2)*

** Speaker wall brackets and screws are packed together with the satellite speakers.*

System outline

This system consists of the unit containing a DVD player, a radio, and a pre-amp, as well as the powered sub-woofer, the center speaker, and four satellite speaker units.
It provides a fully functional DVD theater system by simply connecting to a TV set.





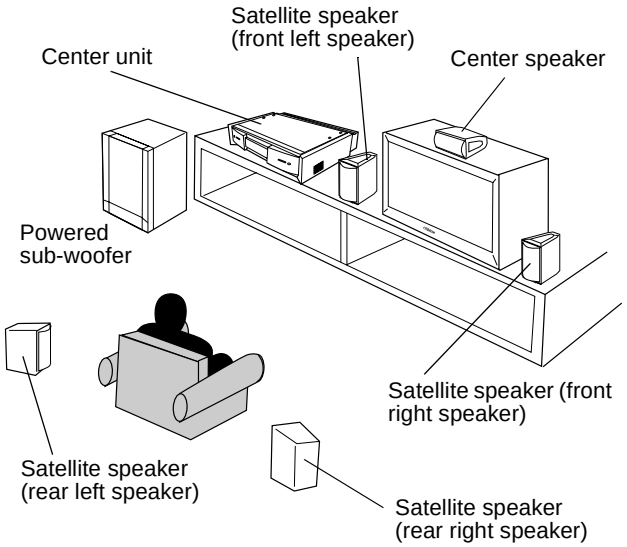
Contains a DVD player, radio, and preamp (volume control, tone control), together with a Dolby digital decoder and DTS digital surround decoder for Dolby Surround and DTS Digital Surround effects.
For some music software, the DAP mode offers the expanded sound field.

This system is capable of most operations.
It may also be used to operate JVC TVs and VCRs, as well as TVs and VCRs from other manufacturers. Note that the remote control unit must be programmed with the correct settings when using products from other manufacturers.

Installation

The following shows an example of the system installation.

System setting example



The rear speakers are placed behind the listening position.

CAUTIONS:

- **For safety reasons, always ensure that there is sufficient place behind the powered sub-woofer.**
- **If the front and rear speakers are placed on the furniture etc., always ensure that they are level.**

To hang satellite speakers from the wall

Use the supplied bracket to fix satellite speakers to the wall.

CAUTION: ATTACHING THE BRACKETS ON THE WALL

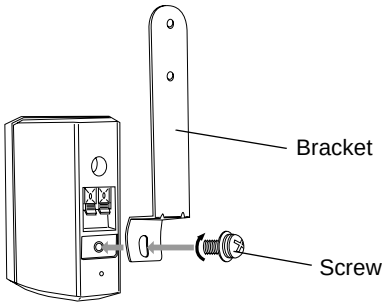
When attaching the brackets on the wall, have them attached to the wall by a qualified person.
DO NOT attach the brackets on the wall by yourself to avoid an unexpected damage of their falling from the wall, caused by incorrect attachment or weakness in the wall.

Location of attachment to wall:

Care is required in selecting a location for attaching satellite speakers to the wall. Injury to personnel, or damage to equipment, may result if the speakers are attached in a location which interferes with daily activities.

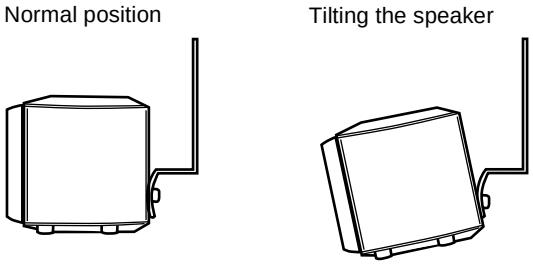
Attaching speakers to the bracket

1 Use the screw supplied to attach the speaker to the bracket.



2 Adjusting the angle of the satellite speakers

The angle of the speaker may be adjusted along the channel in the bracket.
When adjusting the angle, loosen the screw slightly, make the adjustment, and then tighten the screw firmly.



CAUTION:

If the screw is not tightened firmly, it may cause injury to personnel or damage to equipment.

About discs

Playable disc types

Playable and non-playable disc types are as follows:

Playable discs

DVD Video CD Audio CD

The DVD Logo is a trademark.

Non-playable discs

- DVD-ROM
- DVD-RAM
- DVD-R
- DVD-RW
- CD-R*
- CD-ROM
- PHOTO CD
- CD-RW*

* *Audio formatted CD-R and CD-RW can be played.*

- Playing back discs list as "Non-playable discs" above may generate noise and damage speakers.
- Only audio can be played for CD-G, CD-EXTRA and CD TEXT.

Notes on DVD discs

- DVD players and DVD discs have their own Region Code numbers. This unit only can play back DVD discs whose Region Code numbers include "1".

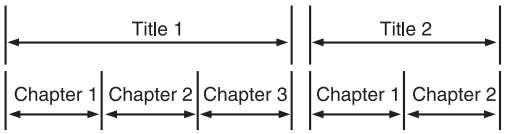
Examples of playable DVD discs:

- This unit is designed to use the NTSC system. The unit cannot play back the disc recorded on the PAL system.

Disc structure

A DVD disc is comprised of "titles", while an Audio CD or Video CD is comprised of "tracks". Each title may be divided into some "chapters". For example, if a DVD disc contains some movies, each movie may have its own title number, and each movie may be divided into some chapters. In a DVD karaoke disc, each song usually has its own title number and does not have chapters. In general, each title has independent content, while each chapter in the same title has continuity.

Example: DVD disc



Example: Audio CD/Video CD

Video CDs with Playback Control function

What is Playback Control function?

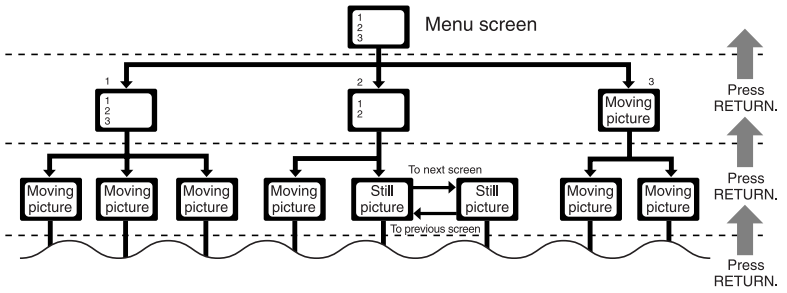
The Playback Control function, allows you to enjoy menu-driven operation and high-resolution still images which have a resolution four times greater than moving pictures.

- **Menu-driven playback**
  You can interact with the screen using a menu display to select and play an entry.
- **High-resolution still image display**
  You can display high-quality images four times clearer than moving pictures.

A selection menu is displayed when you start playing a Video CD with the Playback Control feature. The selection menu shows a list of numbers for selection. Some discs may show moving pictures or a divided screen.

1. When a list of numbers is displayed, selecting a number shows its contents.
2. When "►" or "SELECT" is displayed on the television screen, pressing this button jumps to the specific picture.
3. When the selection menu is re-displayed after you have played your selection, selecting a number again replays its contents.
(Some discs may show the menu screen several times.)
When ►►I and I◄◄ are shown, pressing "NEXT" or "PREV" can change the selection menu.
4. After playback, press RETURN to go back to the previous screen.

To stop playback, press STOP.



Note:

- *When a menu is displayed for a long time (about ten minutes), the screen background automatically gets dark to prevent screen burn-in while the setting is suspended.*

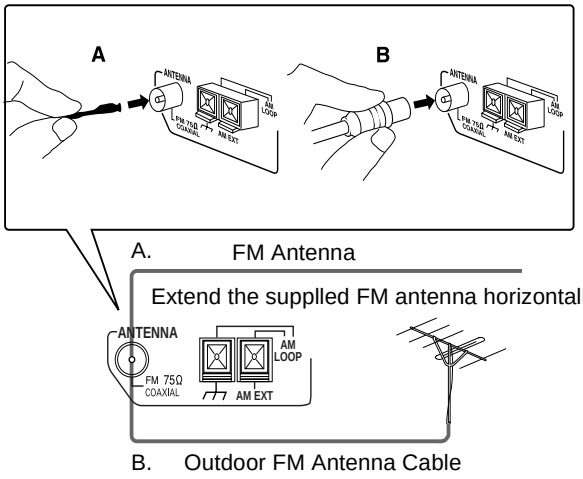
Connections

CAUTION:

- **Make all connection before plugging the system in an AC outlet.**

Connecting the FM and AM antennas

FM antenna connections



A.Using the supplied FM antenna

The FM antenna provided can be connected to the FM 75 Ω COAXIAL terminal as temporary measure.

B.Using the standard type connector (Not supplied)

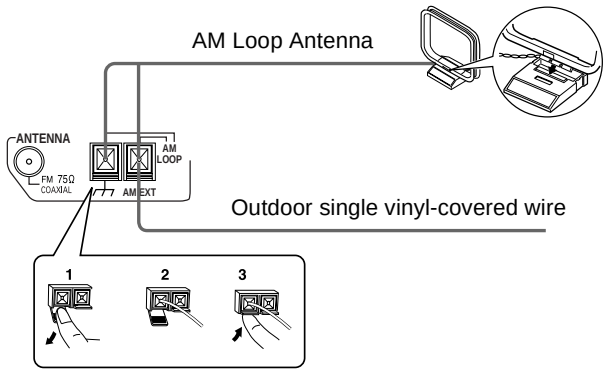
A standard type connector should be connected to the FM 75 Ω COAXIAL terminal.

Note:

- *If reception is poor, connect the outdoor antenna. Before attaching the 75 Ω coaxial cable (the kind with a round wire going to an outdoor antenna), disconnect the supplied FM antenna.*

AM antenna connections

Turn the loop until you have the best reception.

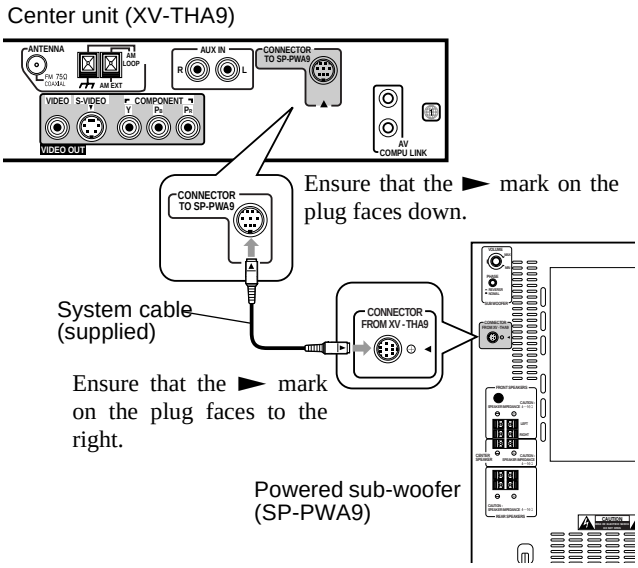


Notes:

- *Make sure the antenna conductors do not touch any other terminals, connecting cords and power cord. This could cause poor reception.*
- *If reception is poor, connect an outdoor single vinyl-covered wire to the AM EXT terminal. (Keep the AM loop antenna connected.)*

Connecting the powered sub-woofer

Use the supplied system cable to connect the powered sub-woofer (SP-PWA9).

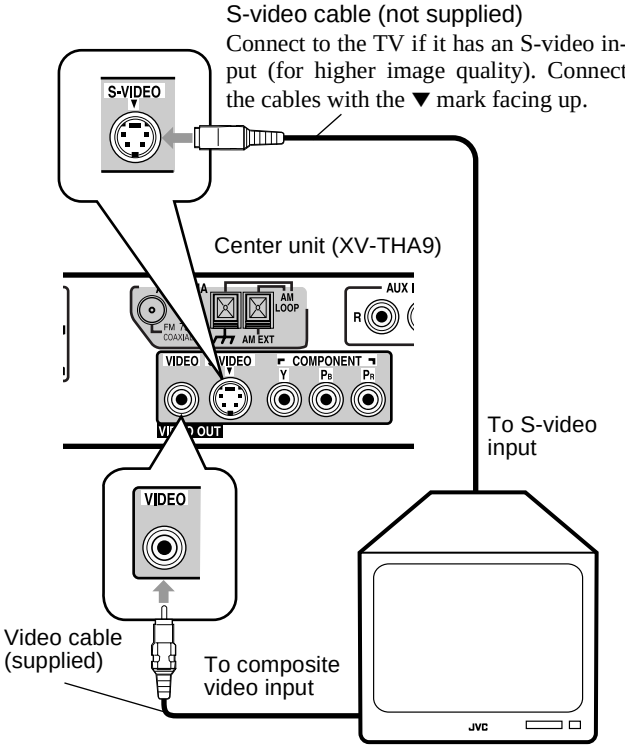


CAUTUON:

Use the system cable provided for attaching the center unit and the sub-woofer.

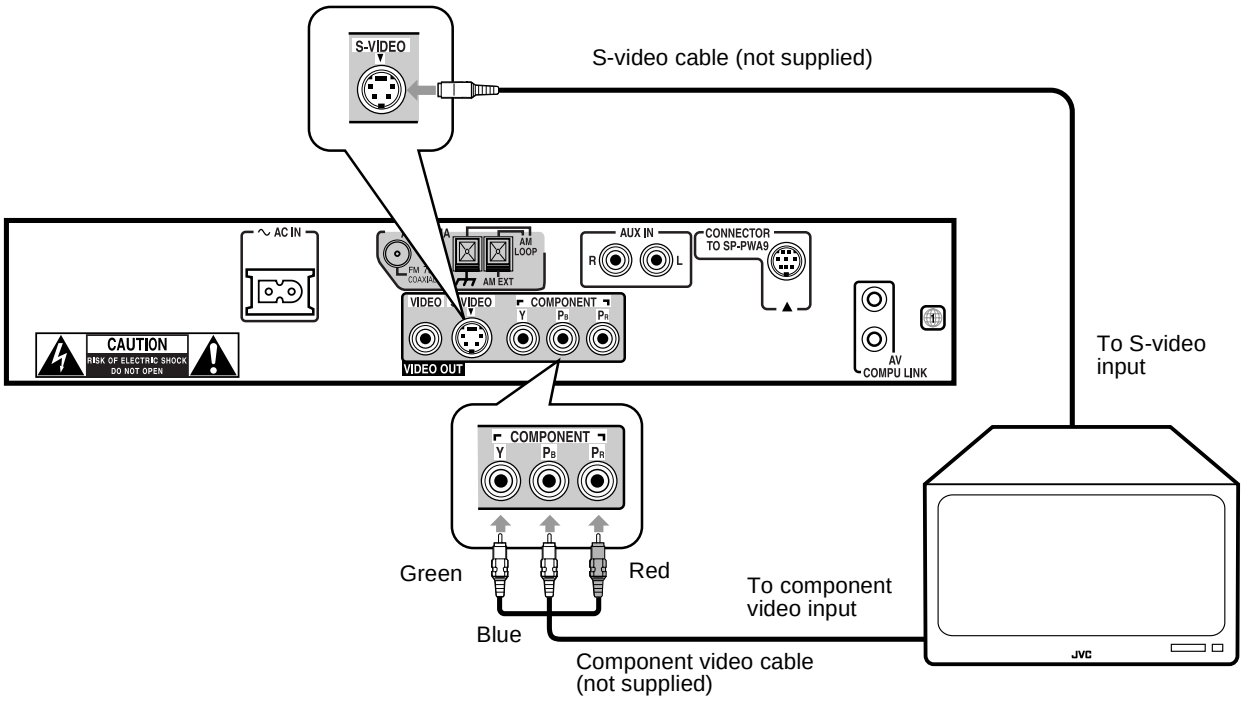
Connecting the TV

Connect the TV to view video images from the unit.



Connecting the TV with the component video input jacks

Connect the TV with the component video input jacks to view high quality picture.



- Connect "Y" to "Y", "P_B" to "P_B", and "P_R" to "P_R" correctly.

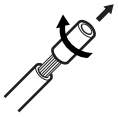
Note:

- *When the component video input jacks of the TV are of the BNC type, use an adapter to convert the pin jacks to BNC jacks (not supplied).*
- *Connect the S-video cable (not supplied). Otherwise, some functions of the TV may not work.*

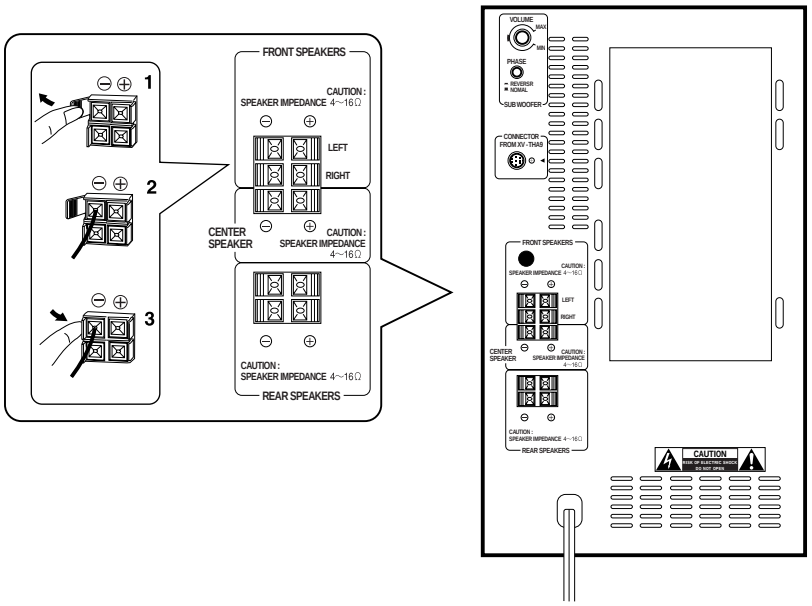
Connecting speakers

Connect the satellite speakers and center speaker to the terminals on the powered sub-woofer using the speaker cords supplied.
Labels are attached to the speaker cords to indicate the speaker and terminal to which each is to be connected.

- The four satellite speakers may be used at either front or rear.
- Ensure that the left and right speakers are connected to left and right respectively, and that they are connected with the correct polarity (+ve, –ve). The white speaker cord connects to the + terminal, and the black speaker cord connects to the – terminal.



Twist and remove the insulation at the end of each speaker cord.

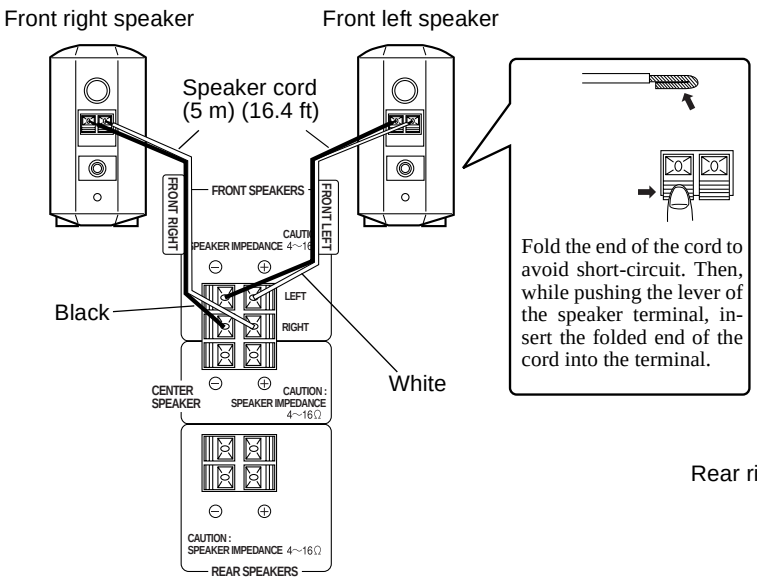


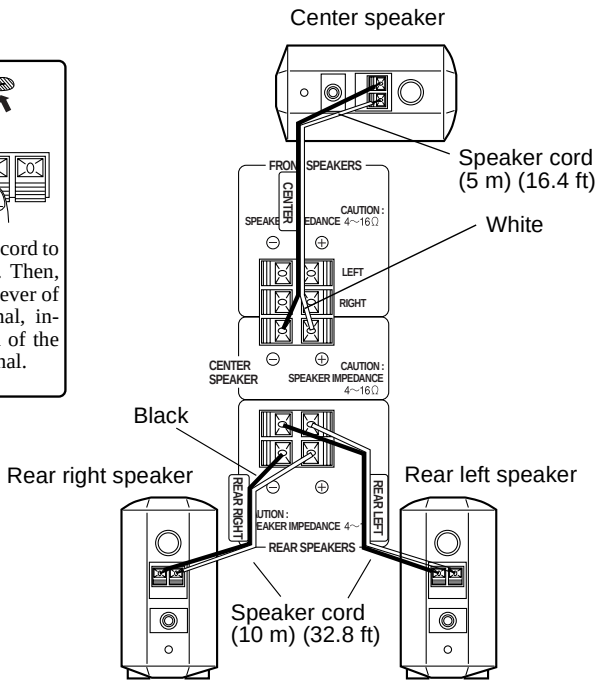
Connecting the front speakers

Connect the right speaker to the FRONT SPEAKERS RIGHT terminal.
Connect the left speaker to the FRONT SPEAKERS LEFT terminal.

Connecting the rear and center speakers

Connect the right rear speaker to the REAR SPEAKERS RIGHT terminals.
Connect the left rear speaker to the REAR SPEAKERS LEFT terminals.
Connect the center speaker to the CENTER SPEAKER terminals.





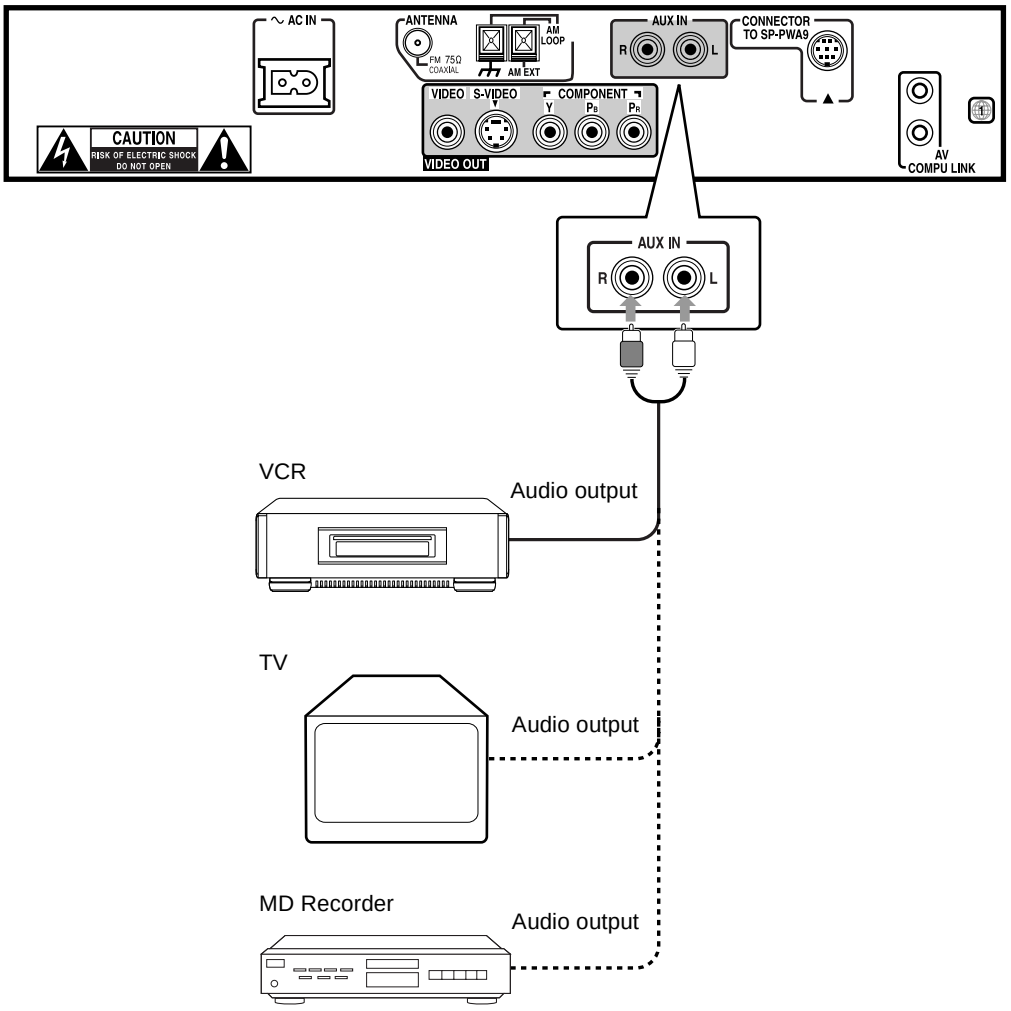
Note:

• Mixing up the polarity of the speaker cords can reduce the stereo effect and sound quality.

Connecting an audio component

You can connect an analog audio component, such as VCR, TV and MD recorder to this system.
Refer also to the manuals supplied with your components.

Use the cable with RCA pin plugs (not supplied).
Connect the white plug to the left jack, and the red plug to the right jack.



CAUTION:

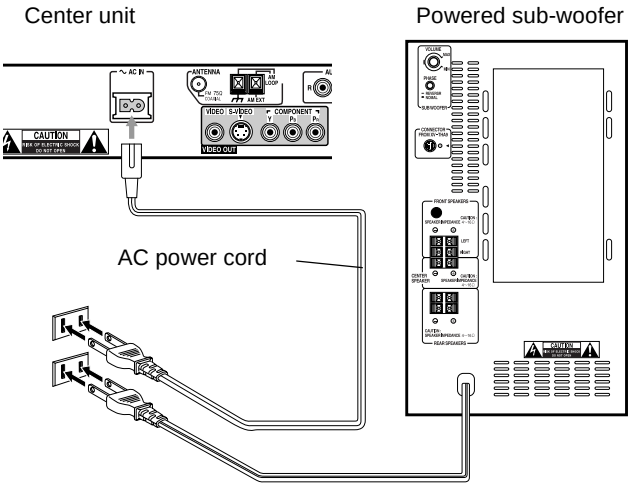
If you connect a sound-enhancing device such as a graphic equalizer between the source components and the center unit, the sound output through this system may be distorted.

Connecting the power cord

Before plugging the center unit and powered sub-woofer into an AC outlets, make sure that all connections have been made.

Plug the power cord into an AC outlet.
The red STANDBY lamp on the center unit lights when the power cord is plugged in.

Keep the power cord away from the connecting cables and the antenna cable. The power cord may cause noise or screen interference.
We recommend that you use a coaxial cable to connect the FM outdoor antenna, since it is well-shielded against interference.



CAUTIONS:

- **Do not touch the power cord with wet hands.**
- **Do not pull on the power cord to unplug the cord. When unplugging the cord, always grasp the plug so as not to damage the cord.**

Notes:

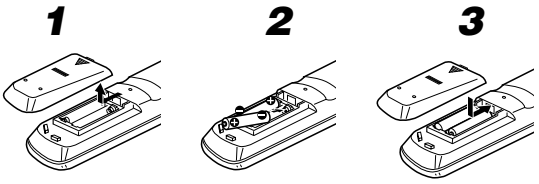
- *The preset settings such as preset channel and sound adjustment may be erased in a few days in the following cases:*

– *When you unplug the power cord.*
– *When a power failure occurs.*

- *The speakers will not produce any sound if the powered sub-woofer power cord is removed from the AC outlet while the center unit is turned on.*
  In this case power will not come on even when the powered sub-woofer power cord is plugged in the AC outlet.
  Press ⏻/I on the center unit, or AUDIO ⏻/I on the remote control to turn power on. This will turn the powered sub-woofer on and sound will be emitted from the speakers.

Putting batteries in the remote control

Before using the remote control, put two supplied batteries first. When using the remote control, aim the remote control directly at the remote sensor on the center unit.



1 On the back of the remote control, remove the battery cover.

2 Insert batteries. Make sure to match the polarity: (+) to (–).

3 Replace the cover.

- If the range or effectiveness of the remote control decreases, replace the batteries. Use two R6P (SUM-3)/AA (15F) type dry-cell batteries.

CAUTIONS:

Follow these precautions to avoid leaking or cracking cells:

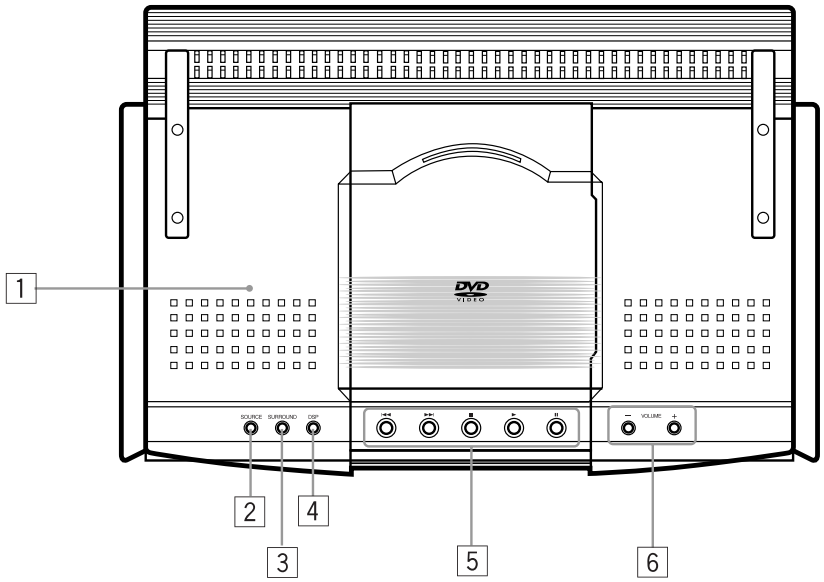
- **Place batteries in the remote control so they match the polarity: (+) to (–).**
- **Use the correct type of batteries. Batteries that look similar may differ in voltage.**
- **Always replace both batteries at the same time.**
- **Do not expose batteries to heat or flame.**

Parts Identification

Become familiar with the buttons and controls on the center unit and powered sub-woofer before use. Refer to the pages in parentheses for details.

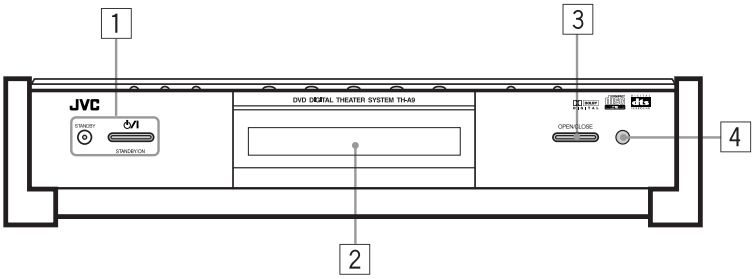
Center unit

Front panel (top view)



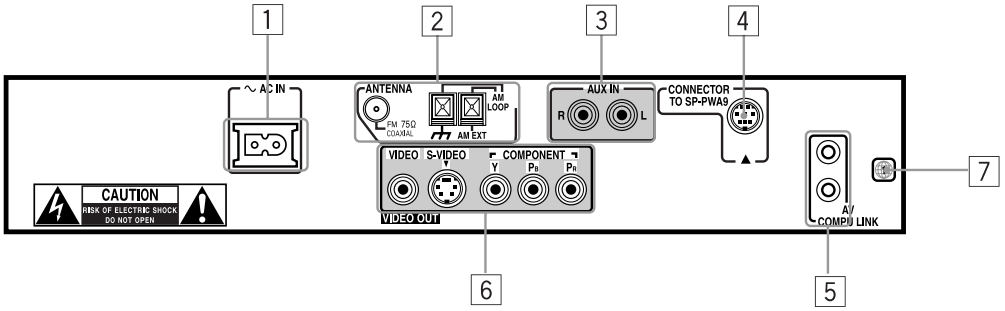
1 Disc cover (22)
2 SOURCE button (18)
3 SURROUND button (21)
4 DSP mode button (21)
5 DVD control buttons (23, 24, 25)
6 VOLUME +/– button (17)

Front panel (front view)



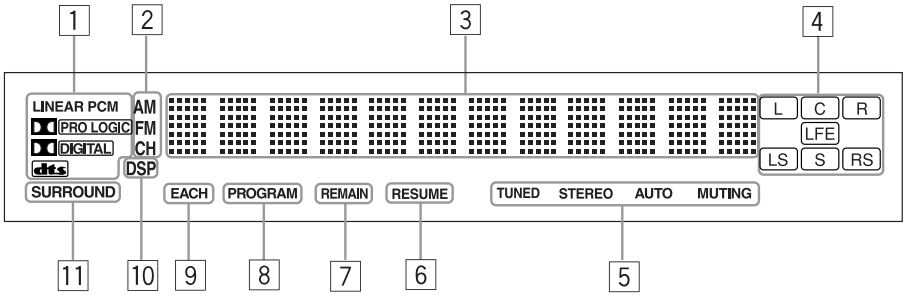
1 STANDBY/ON ⏻/I button and STANDBY lamp (17)
2 Display window
3 OPEN/CLOSE button (22)
4 Remote sensor

Rear panel



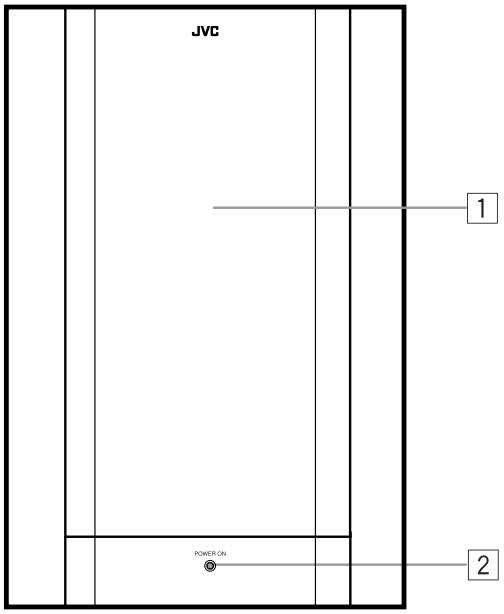
1 AC IN socket (10)
2 Antenna terminals (6)
3 AUX IN terminals (9)
4 Connector for powered sub-woofer (6)
5 AV COMPU LINK terminals (53)
6 Video output terminals (6, 7)
7 Region code number (5)

Display window



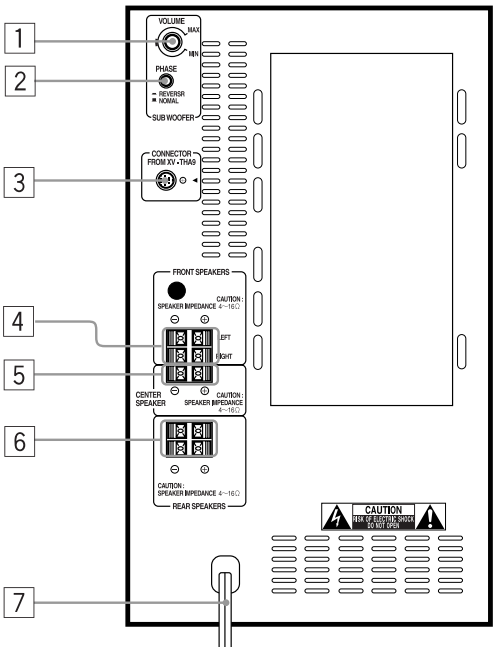
1 Decode mode indicator
2 Radio indicator (40, 41)
3 Multi-information window
Displays time, status information, etc.
4 Audio channel indicator (19)
5 Radio reception mode indicator (40, 41)
6 RESUME indicator (25)
7 REMAIN indicator (Timer indicator) (39)
8 PROGRAM indicator (36)
9 EACH indicator (Timer indicator) (39)
10 DSP indicator (21)
11 SURROUND indicator (21)

Powered sub-woofer (Front)



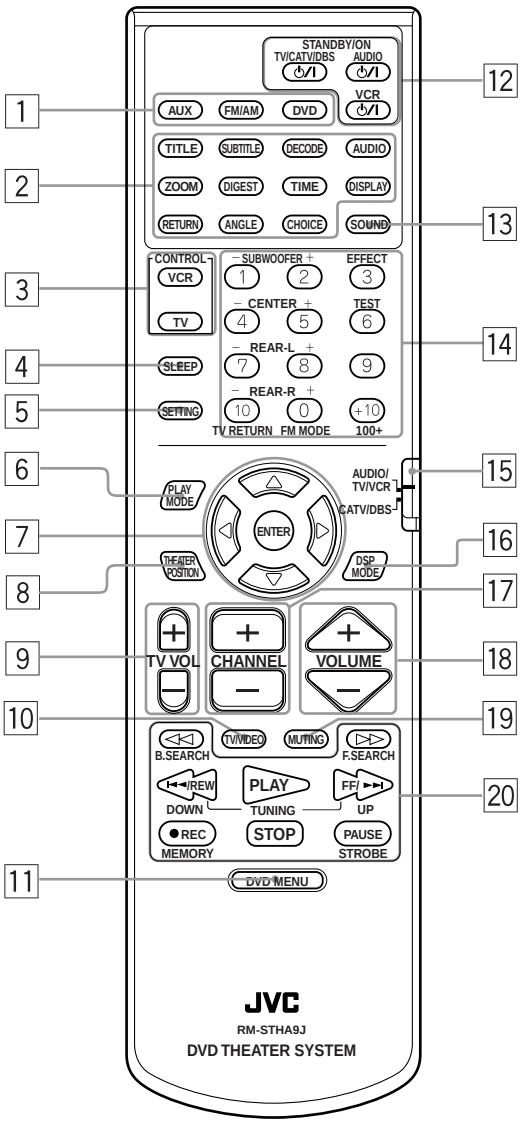
1 Speaker
2 POWER ON lamp (17)

(Rear)



1 VOLUME knob (18)
2 PHASE button (18)
3 Connector for center unit (6)
4 FRONT SPEAKERS terminals (8)
5 CENTER SPEAKER terminals (8)
6 REAR SPEAKERS terminals (8)
7 Power cord (10)

Remote controls



1 Source selecting buttons (14, 18, 41)
AUX, FM/AM, DVD
2 DVD operating buttons
TITLE (25)
SUBTITLE (31)
DECODE (19)
AUDIO (32)
ZOOM (31)
DIGEST (29)
TIME (38, 39)
DISPLAY (37, 38)
RETURN (26)
ANGLE (33)
CHOICE (42)
3 Control buttons VCR/TV (55, 56)
4 SLEEP button (20)
5 SETTING button (48)
6 PLAY MODE button (34, 35, 36, 37)
7 Cursor and ENTER buttons (25)
8 THEATER POSITION button (34)
9 TV VOL +, – button (55)
10 TV/VIDEO button (55)
11 DVD MENU button (25)
12 STANDBY/ON buttons
AUDIO ⏻/I (17, 22)
TV/CATV/DBS ⏻/I (17, 22, 55, 56)
VCR ⏻/I (56)
13 SOUND button (51, 52)
14 Number buttons
15 Remote control mode selector (55)
AUDIO/TV/VCR, CATV/DBS
16 DSP MODE button (21)
17 CHANNEL +, – button (55, 56)
18 VOLUME +, – button (17)
19 MUTING button (18)
20 Operating buttons (23, 24, 40, 41)

Principles of operation

The system may be operated via the remote control or the buttons on the center unit, or via the menu on the screen.

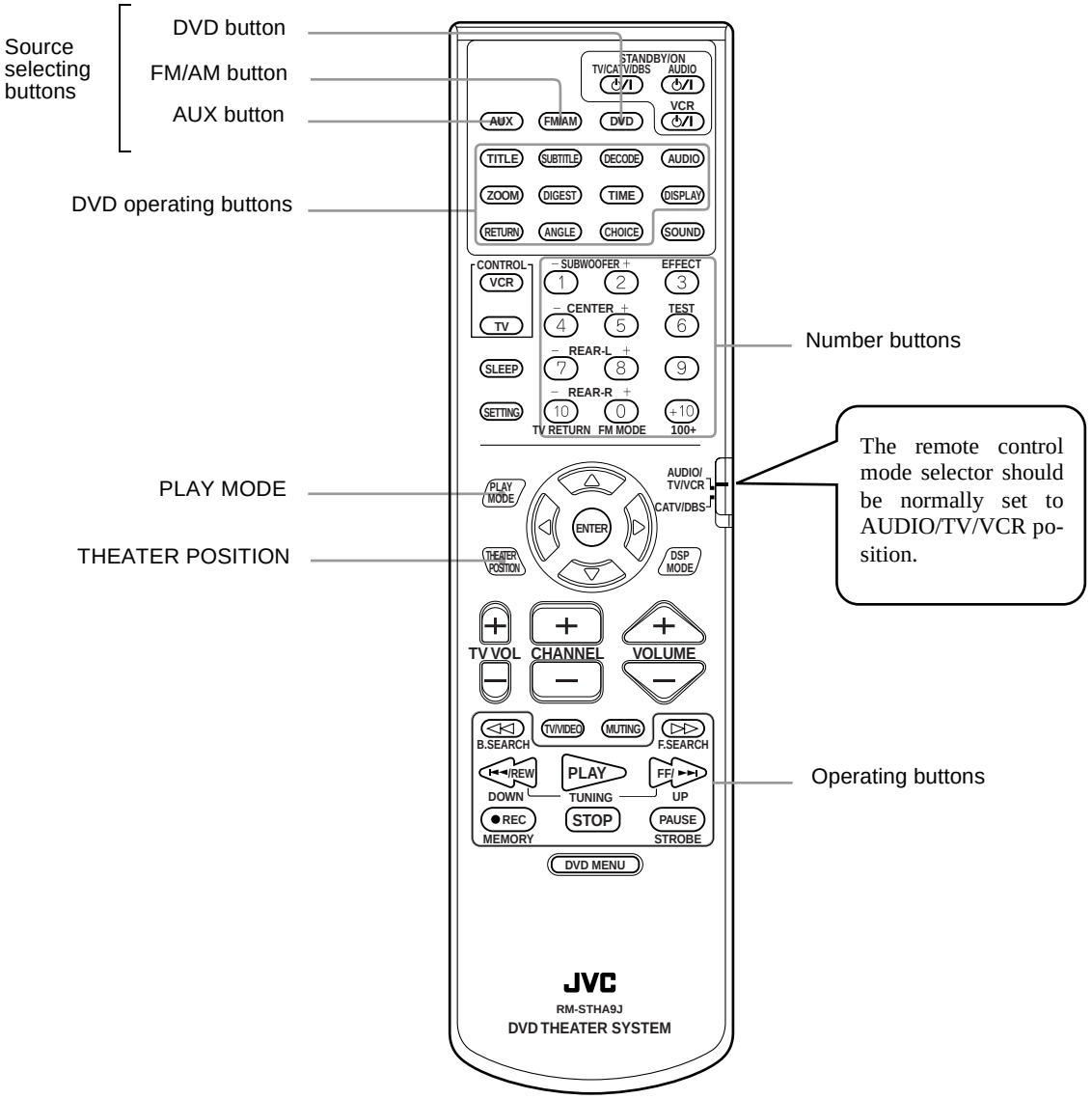
Operation with the remote control

Select the appropriate mode for the remote control when the remote control is used for operation.
The remote control mode is selected by pressing the source selecting buttons.

Press DVD: The DVD operation buttons, number buttons, PLAY MODE button, THEATER POSITION button and operating buttons operate in DVD mode, enabling operation of the DVD, Audio CD, and Video CD discs.

Press FM/AM: The number buttons and operating buttons operate in the radio mode. In Radio mode, nothing will be displayed on the TV.

Press AUX: Press to listen to sound inputted to the AUX jacks. In AUX mode, only the VOLUME + and – buttons are operable. Also, nothing will be displayed on the TV.



Note:

- *The remote control mode is affected by the source selecting buttons as well as the SOUND, VCR, TV buttons, and the remote control mode selector.*
  See pages 51 and 55 for details.

On-screen displays

The center unit provides several on-screen displays.
With some displays, you can set or select preferences or functions, while the others are display-only.

Opening screens

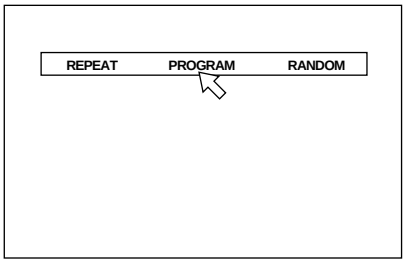
The Opening screen appears automatically in some conditions.
At the bottom, the following information are indicated depending on the center unit's status.

- NOW READING: The center unit is now reading the disc information (TOC).
- REGION CODE ERROR!: The DVD disc loaded cannot be played because the region code of the disc does not match the center unit.
- OPEN: The disc cover is now opening.
- CLOSE: The disc cover is now closing.

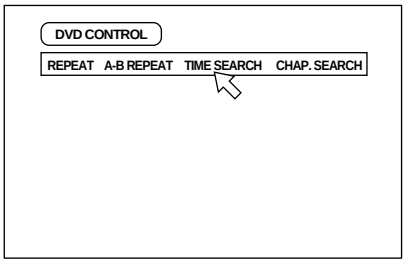
Opening display

Play mode displays

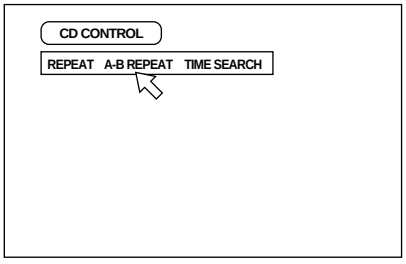
While stopped



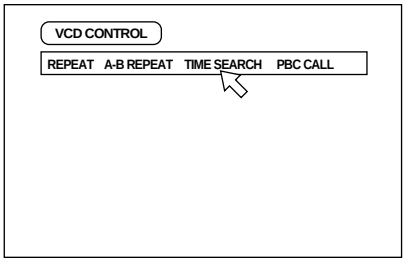
During DVD playback



During Audio CD playback

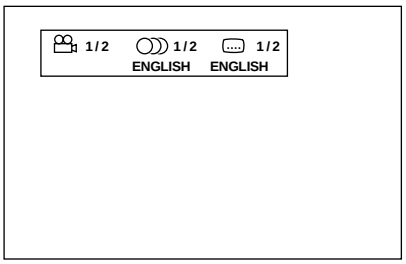


During Video CD playback

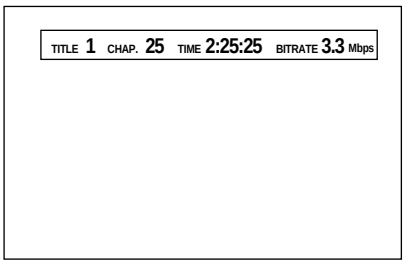


Status displays

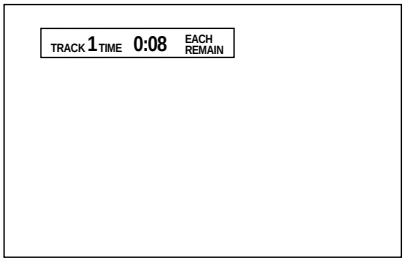
DVD function status



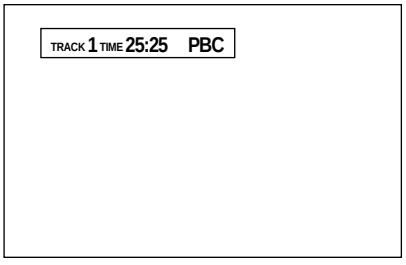
Disc/time (DVD)



Disc/time (Audio CD/Video CD without PBC)

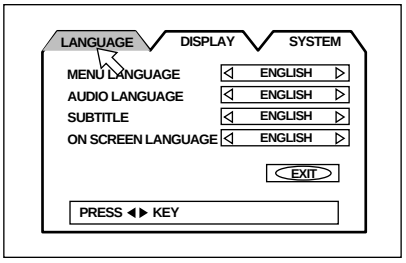


Disc/time (Video CD with PBC)

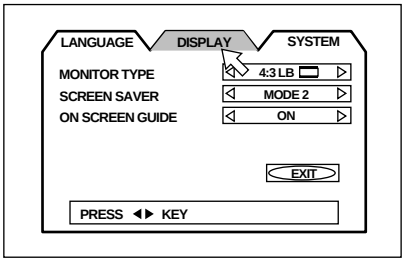


On-screen menus for setting preferences

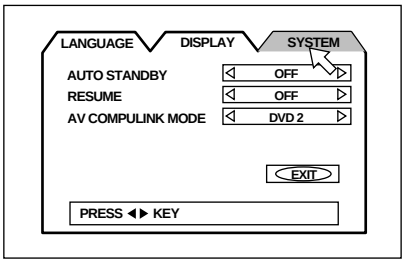
LANGUAGE



DISPLAY

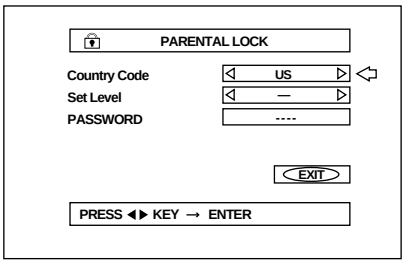


SYSTEM



On-screen menus for setting parental lock

PARENTAL LOCK



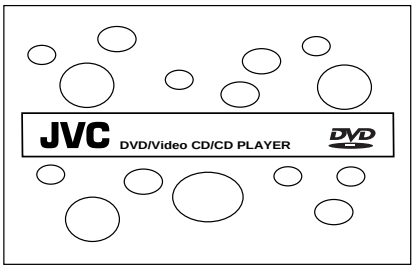
On-screen menus for using discs

The disc status and items are displayed as follows on the on-screen menus for using the disc.

Preventing screen burn-out with the screen saver [SCREEN SAVER]

A television monitor screen may be burned out if a static picture is displayed for a long time. To prevent this, the center unit automatically activates the screen saver function if a static picture, such as an on-screen display or menu, is displayed for over 5 minutes.

- Pressing any button on the center unit or the remote control unit will release the screen saver function and return to the previous display.
- You can select one of several screen saver modes available (see page 44).



Note:

- *The screen saver does not work during playing back an Audio CD or while stopped after played back an Audio CD.*

Basic operations

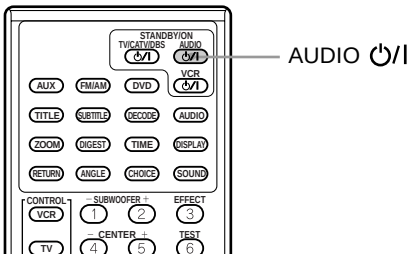
The basic operations for this system are as follows.

IMPORTANT

Check that remote control mode selector is set to the appropriate position:
Set to "AUDIO/TV/VCR" to operate an audio system, TV, or VCR.
Set to "CATV/DBS" to operate a CATV converter or DBS tuner.
The system will not operate normally while in CATV/DBS mode.

To turn the system power supply ON and OFF (standby)

From the remote control:



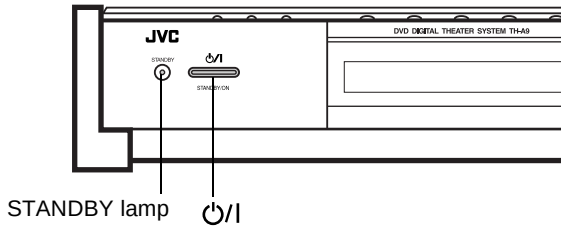
Press AUDIO ⏻/I to turn power on.

The STANDBY lamp goes off, and the current source name (DVD, AM or FM station frequency, or AUX) appears on the display window. At this time, the disc cover slides backwards and the top buttons on the center unit appears.

Press AUDIO ⏻/I again to turn power off (standby).

The STANDBY lamp is lit.
The disc cover slides forward to cover the top buttons on the center unit and the center unit turns off.

On the center unit:



Press ⏻/I to turn power on.

The STANDBY lamp goes off, and the current source name (DVD, AM or FM station frequency, or AUX) appears on the display window. At this time, the disc cover slides backwards and the top buttons on the center unit appears.

Press ⏻/I again to turn power off (standby).

The STANDBY lamp is lit.
The disc cover slides forward to cover the top buttons on the center unit and the center unit turns off.

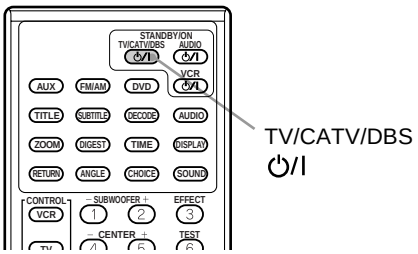
Notes:

- *The powered sub-woofer power supply is linked to the center unit. The green POWER ON lamp on the powered sub-woofer lights when power is turned on, and goes off when power is turned off.*
- *A small amount of power is consumed in the standby mode (center unit only). Remove the AC power cord from the AC outlet to turn the center unit off completely.*

To turn TV power ON and OFF

JVC TVs may be used as is with the remote control. TVs from other manufacturers require changes to the transmittable signals before they can be used with the remote control. See page 55 for details of changing the transmittable signals.

From the remote control:



Press TV/CATV/DBS ⏻/I to turn power on.

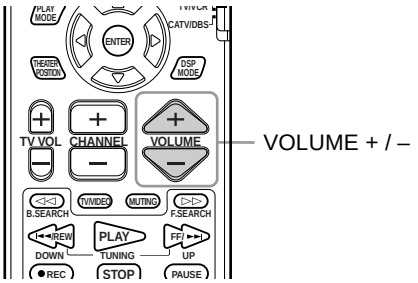
Press TV/CATV/DBS ⏻/I again to turn power off.

Adjusting volume [VOLUME]

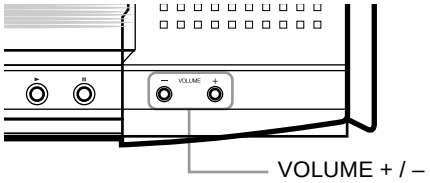
The volume level can be adjusted within the range of "0" (minimum) to "80" (maximum).

Common:

From the remote control



On the center unit



Press VOLUME + or –.

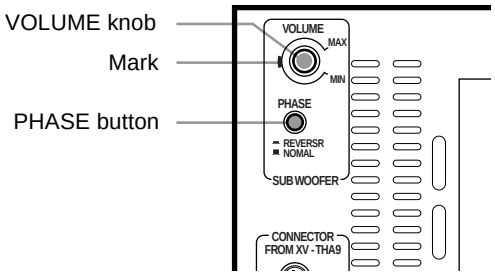
Press VOLUME + to increase volume.
Press VOLUME – to decrease volume.

CAUTION:

Always set the volume to the minimum before starting any source.
If the volume is set at its high level, the sudden blast of sound energy can permanently damage your hearing and/or ruin your speakers.

Sub-woofer volume control and phase setting

Use the VOLUME knob and PHASE button at the rear of the powered sub-woofer.



Volume control

Turn the VOLUME knob.

Adjust to a volume appropriate for balance with the other speaker(s).

The mark indicates the volume position in normal use.

- Adjust when the volume from the sub-woofer is too high or too low in relation to the volume from the front speaker.

Phase setting

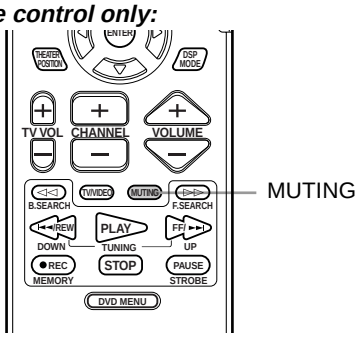
Play sound through the sub-woofer and adjust the PHASE button to a position (▂ REVERSE or ▉ NORMAL) at which the lowest frequency is heard best.

Note:

- *Phase is closely related to the distance from the listening position to the front speaker and sub-woofer.*
  While listening, adjust until the lowest frequency is heard best.

Muting the sound [MUTING]

From the remote control only:

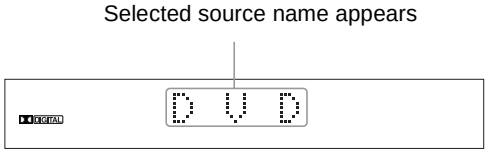


Press MUTING to mute the sound through all speakers connected.

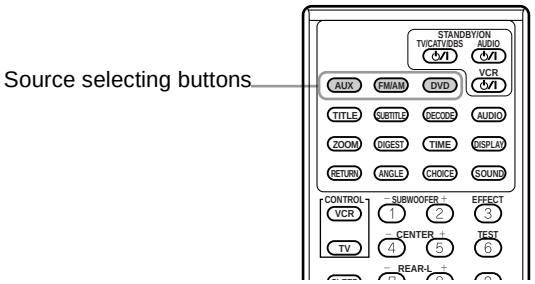
"MUTING" appears on the display window and volume turns off. To restore the sound, press MUTING again so that "OFF" appears on the display.

- Pressing VOLUME +/– also restores the sound.

Selecting the source to play



From the remote control:



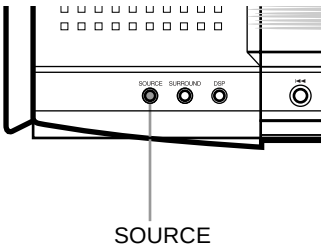
Press one of the source selecting buttons.

DVD	Select the DVD player.
FM/AM	Select an FM or AM broadcast. Each time you press the button, the band alternates between FM and AM.
AUX	Select a component connected to the AUX jacks.

Notes:

- *When you press one of the source selecting buttons on the remote control, the system automatically turns on.*
- *The cooling fan in the center unit turns on as long as the DVD is selected as the playback source. It stops when other playback source (FM/AM or AUX) is selected.*

On the center unit:



Press SOURCE until the source name you want appears on the display.

The source changes as shown below each time the button is pressed.

→ **DVD** → **AM** → **FM** → **AUX** → (back to the beginning)

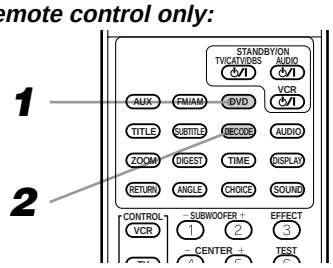
Note:

- *When AM or FM is selected, the receiving frequency appears on the display window. At the same time, the AM or FM indicator lights up on the display window.*

Changing the decode mode [DECODE]

You can change the decode mode for digital audio playback.

From the remote control only:



1 Press DVD to select DVD as the source.

2 Press DECODE to select the decode mode.

The display changes as shown below each time the button is pressed.

→ **AUTO/PCM** → **DTS** → (back to the beginning)

AUTO/PCM	Optimized for all discs playable on this system. (Default)
DTS	Select this mode when playing a DVD disc recorded in DTS Surround. The DTS decoder will be selected as the internal decoder.

When to try changing the decode mode

When the decode mode is set to the default AUTO/PCM setting and a DVD recorded in Dolby Digital Surround or DTS Digital Surround is played, the internal decoder will be automatically selected before audio playback begins. Depending on the disc recorded in DTS Digital Surround, this may result in a brief loss of audio after playback starts. This is due to lost audio signals that were inputted during internal decoder selection.
In these instances, lost audio can be prevented by manually selecting "DTS" beforehand.
However, please note that when the decode mode is set to DTS, you will be unable to playback audio from discs recorded in a mode other than the DTS Digital Surround.
After changing the decode mode and playing back a disc, return the decode mode to "AUTO/PCM".

Note:

- *Changing the playback source (e.g. AM/FM) will automatically return the decode mode to "AUTO/PCM".*

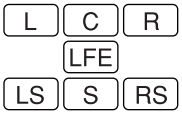
When a decode mode which differs from the type of disc being played is selected

Insert a DVD disc in the center unit to display the type of audio being played in the Decode mode indicator on the display window.
Audio cannot be played if a decode mode which differs from the displayed mode is selected.
The selected decode mode flashes to indicate that the selected decode mode does not allow audio playback.

Example: When DTS is selected as the decode mode for Dolby digital audio.

Audio channel display indicator

The audio channel indicator shows the audio channel configuration for the disc currently playing.

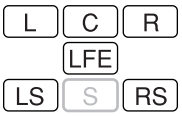


The indicators refer to the speaker channel as follows.

L:	Left front speaker channel
R:	Right front speaker channel
C:	Center speaker channel
RS:	Right surround speaker channel
LS:	Left surround speaker channel
S:	Rear speaker channel (monaural)
LFE:	Sub-woofer channel

The audio channel indicator indicates the type of disc currently playing as follows.

With Dolby digital 5.1 ch or DTS digital 5.1 surround



With Dolby digital (Lt/Rt*)

With stereo sound (e.g. Audio CD)

** Lt/Rt refers to the downmix output when connected to a device that uses Dolby Pro Logic.*

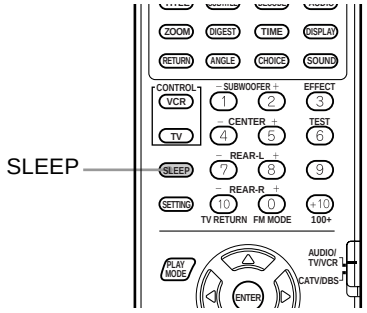
Note:

- *The audio channel indicator does not show the actual speaker channel that is producing sound.*

Using the Sleep Timer [SLEEP]

Using the Sleep Timer, you can fall asleep to music and know the system will turn off by itself rather than play all night.

From the remote control:



Press SLEEP repeatedly.

The shut-off time changes as follows (in minutes):

→10 → 20 → 30 → 60 → 90 → 120 → 150 →
OFF (Canceled) → (back to the beginning)

When the shut-off time comes

The system turns off automatically.

To check or change the time remaining until the shut-off time

Press SLEEP once.

The remaining time until the shut-off time appears in minutes.

- To change the shut-off time, press SLEEP repeatedly.

To cancel the Sleep Timer

Press SLEEP repeatedly until "SLEEP OFF" appears on the display window.

- Turning off the power also cancels the Sleep Timer.

Using the DSP Modes [DSP MODE]

The built-in Surround Processor provides two types of the DSP (Digital Signal Processor) mode — Surround mode and DAP (Digital Acoustic Processor) mode.

Surround modes

With this system, you can use two types of the Surround mode.

Dolby Surround (Dolby Digital and Dolby Pro Logic)*

Used to watch the soundtracks of software encoded with Dolby Digital (bearing the mark DOLBY DIGITAL) or with Dolby Surround (bearing the mark DOLBY SURROUND).
Dolby Digital and Dolby Pro Logic can be selected automatically according to software played back.

DTS Digital Surround**

DTS Digital Surround is a discrete 5.1 channel digital audio format available on CD and DVD software.
To watch the soundtracks of video software bearing the mark DTS, the system can provide you with DTS Digital Surround decoder.
DTS Digital Surround is automatically selected according to software played back.

Note:

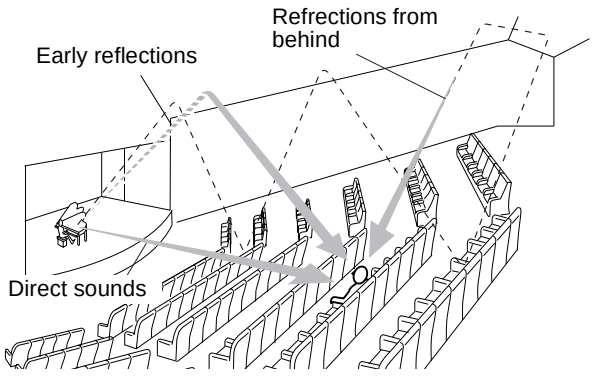
- *Change the decode mode from "AUTO/PCM" to "DTS" before playing an Audio CD recorded with DTS Digital Surround. For details, see page 19.*

** Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic", and the double-D symbol are trademarks of Dolby Laboratories. Confidential Unpublished Works. c1992-1998 Dolby Laboratories, Inc. All rights reserved.*

*** Manufactured under license from Digital Theater Systems, Inc. US Pat. No. 5,451,942 and other world-wide patents issues and pending. "DTS" and "DTS Digital Surround" are trademarks of Digital Theater Systems, Inc. c1996 Digital Theater Systems, Inc. All rights reserved.*

DAP modes

The sound heard in a concert hall or club consists of direct sound and indirect sound — early reflections and reflections from behind. Direct sounds reach the listener directly without any reflection. On the other hand, indirect sounds are delayed by the distances of the ceiling and walls. These direct sounds and indirect sounds are the most important elements of the acoustic surround effects. The DAP mode can create these important elements, and gives you a real "being there" feeling.



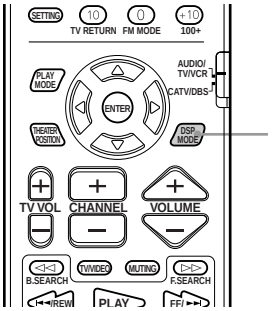
THEATER: Gives the feeling of a large theater.
LIVE CLUB: Gives the feeling of a live music club with a low ceiling.
DANCE CLUB: Gives a throbbing bass beat.
HALL: Gives clear vocal and the feeling of a concert hall.
PAVILION: Give the spacious feeling of a pavilion with a high ceiling.

Notes:

- *The DSP modes have no effect on monaural sources.*
- *The DOLBY DIGITAL indicator lights up when the signals encoded with Dolby Digital come into the system.*
- *The PRO LOGIC indicator lights up when the signals encoded with Dolby Pro Logic decoder built in this system is activated.*
- *The dts indicator lights up when the signals encoded with DTS Digital Surround come into the system.*
- *The effects can be adjusted when the DAP mode is selected (see page 52).*

To select the DSP mode

From the remote control:



Press DSP MODE.

The currently selected DSP mode appears on the display when the button is pressed, and changes as follows each time the button is pressed subsequently.

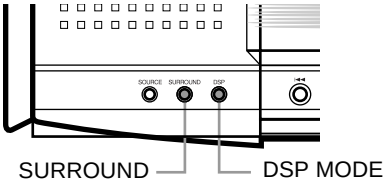
→ SURROUND ON → THEATER → LIVE CLUB → DANCE CLUB → HALL → PAVILION → DSP OFF → (back to the beginning)

- "PRO LOGIC", rather than "SURROUND ON", is displayed when a source other than DVD is selected.
- Select "SURROUND ON" when playing a video with audio recorded in Dolby Pro Logic, Dolby digital, or DTS digital surround audio.
  Selecting "OFF" loses any surround effect, and stereo playback takes place.

Notes:

- *It is possible to select only "SURROUND ON" and "SURROUND OFF" when playing a Dolby digital audio or DTS digital audio DVD.*
- *The DSP mode indicator lights up when DSP mode other than SURROUND is selected.*
- *The SURROUND indicator lights up when SURROUND mode is selected.*

On the center unit:



From the unit, SURROUND ON/OFF and DAP mode can be selected independently.

When playing a DVD disc with audio recorded in Dolby surround, Dolby digital, or DTS digital surround audio:

Press SURROUND.

The current status (e.g. "SURROUND OFF") appears on the display when the button is pressed, and changes between "SURROUND ON" and "SURROUND OFF" each time the button is pressed subsequently.

- "PRO LOGIC", rather than "SURROUND ON", is displayed when a source other than DVD is selected.

When selecting DAP:

Press DSP MODE.

The currently selected DAP mode appears on the display when the button is pressed, and changes as follows each time the button is pressed subsequently.

→ THEATER → LIVE CLUB → DANCE CLUB → HALL → PAVILION → DSP OFF → (back to the beginning)

Notes:

- *The DSP mode indicator lights up when DAP mode is selected.*
- *The SURROUND indicator lights up when SURROUND mode is selected.*

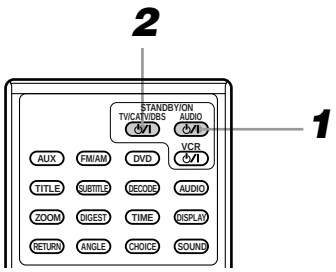
Using the DVD player

DVD Audio CD and Video CD represent disc types.

To turn on the system and TV

DVD Audio CD Video CD

From the remote control:



1 Press AUDIO ⏻/I to turn power on.

- Pressing ⏻/I on the center unit also turns on power.

2 Press TV/CATV/DBS ⏻/I to turn TV on.

- On the TV, select the TV input source to VIDEO (e.g. VIDEO 1).
- To turn on the other manufacturer's TV with TV/CATV/DBS ⏻/I, you need to change the transmittable signal codes beforehand. See page 55.

Notes:

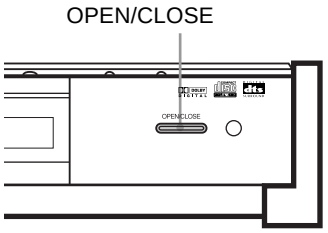
- *When you use Audio CDs, since no screen other than opening screen is displayed, turning on the TV may not be required.*
- *For detailed power on operation including the STANDBY indicator illumination, see page 17.*

To insert a disc

DVD Audio CD Video CD

After turning on the system and the TV, insert a disc as follows:

On the center unit:

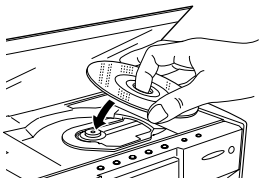


1 Press OPEN/CLOSE to open the disc cover.

- When the current playback source is DVD, "OPEN" appears on the display window. On the TV, "OPEN" message appears on the opening on-screen.

2 Place a disc.

Place a disc with label side up so that it is securely seated.

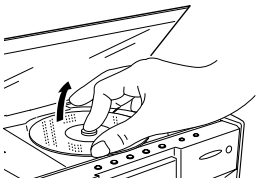


3 Press OPEN/CLOSE to close the disc cover.

- When the current playback source is DVD, "CLOSE" appears on the display window. On the TV, "CLOSE" message appears on the opening on-screen.
- After the disc cover is closed, "READING" appears on the display window. Then, the disc information is read and, if the current playback source is DVD, the information is displayed as described in "Display when a disc is inserted" on page 23. On the TV, while disc information is reading, "NOW READING" message appears on the opening on-screen.

4 Remove the disc after playback has finished.

Press OPEN/CLOSE to open the disc cover.
Then, remove the disc as shown below:
After that, press OPEN/CLOSE to close the disc cover.



CAUTION:

Do not put anything on the disc cover since it slides back and forth, or opens. Doing so may result in damage to the unit.

Notes:

- *The system can play back DVD, Audio CD, Video CD, CD-R/CD-RW (audio-formatted) discs only. Do not insert other disc types.*
  For details about playable disc types, see page 5.
- *When OPEN/CLOSE is pressed to close the disc cover, playback automatically begins with some discs.*
- *You can insert a disc while playing other source (FM/AM or AUX).*
- *When the disc cover is open, you can directly play the disc by pressing DVD on the remote control or by selecting "DVD" with SOURCE on the center unit.*
- *If the Region Code of the disc does not match your system, "REGION CODE ERROR!" appears on the opening on-screen on the TV. This means that you cannot play the disc.*
- *When OPEN/CLOSE is pressed in standby mode, the center unit automatically turns on and the disc cover slides backwards and opens.*

Display when a disc is inserted

Opening on-screen:

When a DVD is inserted

Display window:

"READING" ➞ "DVD"

Note:

- *Playback begins immediately with some DVD discs.*

When a Video CD is inserted:

Display window:

"READING" ➞ "VCD 12 48:12"

(total number of tracks and total time display)

← After 4 seconds

"VCD 1 4:12"

(first track time)

When an Audio CD is inserted

Display window:

"READING" ➞ "CD 12 48:12"

(total number of tracks and total time display)

← After 4 seconds

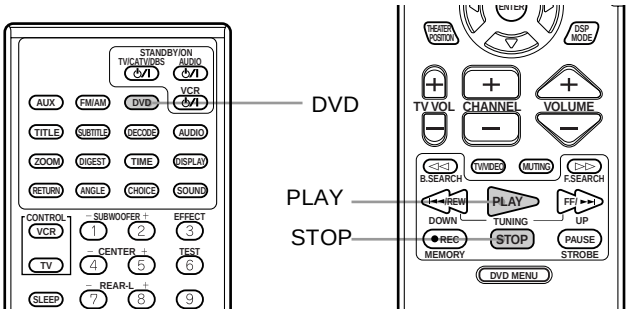
"CD 1 4:12"

(first track time)

To play a disc

DVD Audio CD Video CD

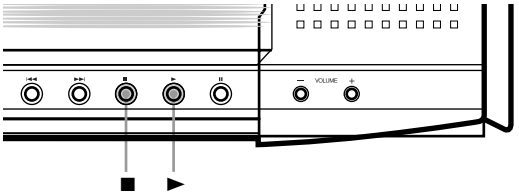
From the remote control:



Press PLAY or DVD.

Playback begins from the first track.

On the center unit:



Press ►.

Playback begins from the first track.

To stop the disc

On the remote control: Press STOP.
On the center unit: Press ■.

Note:

- *For DVD, or Video CDs recorded with PBC (playback control), pressing PLAY or ► may display the menu on the TV. You may select items from the menu screen thus displayed and call up the locations to be viewed (see pages 25 and 26 for details).*

On-screen guide icons

During DVD playback, you may see icons displayed over the picture. These have the following meanings.

Displayed at the beginning of a scene recorded from multiple angles (see page 33).

Displayed at the beginning of a scene recorded with multiple audio languages (see page 32).

Displayed at the beginning of a scene recorded with multiple subtitle languages (see page 31).

A setting is possible to suppress display of these icons. The setting is entered in the on-screen menu under "On-screen guide settings" (see page 44 for details).

About invalid operation icon

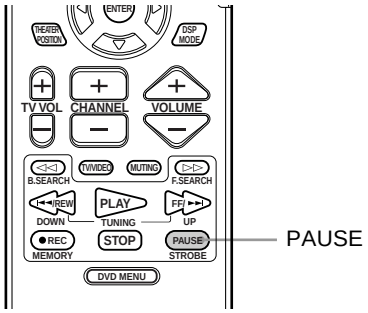
When you press a button, if the unit does not accept its operation, ⃠ appears on your television screen.
Operations are occasionally unacceptable even if ⃠ is not displayed.

Note that some operations may not be accepted. For example, some discs may not allow fast forward, fast backward or slow motion playback.

Pausing

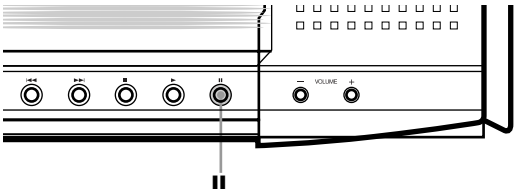
DVD Audio CD Video CD

From the remote control:



Press PAUSE.

On the center unit:



Press II .

Playback is paused.

When using a DVD or Video CD disc, pressing PAUSE or II while paused moves to the next still picture.

To resume playback

From remote control: Press PLAY.

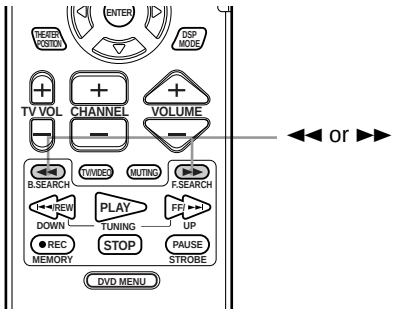
On the center unit: Press ►.

Fast forward and backward

DVD Audio CD Video CD

❑ During playback

From the remote control:



Press ►► or ◄◄.

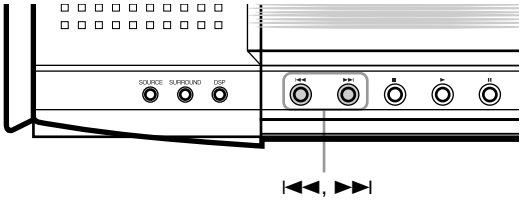
Each time you press the button, the fast forward or backward speed changes as follows:

2× → 5× → 10× → 20× → 60×

To return to the normal speed

Press PLAY.

On the center unit:



Continuously press ►►I or I◄◄.

Continuously pressing the button increases the fast forward or backward speed as follows:

5× → 20×

To return to the normal speed

Release ►►I or I◄◄.

Locating the beginning

DVD Audio CD Video CD

Locates the beginning of the title or chapter with DVDs.

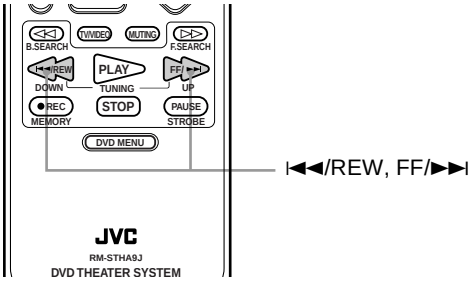
Locates the beginning of the track with Audio CDs and Video CDs.

❑ For DVD: During playback

For Audio CD: During playback or when stopped

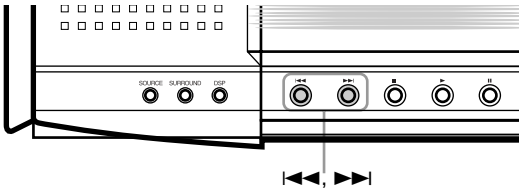
For Video CD: During playback or when stopped

From the remote control:



Press FF/►►I or I◄◄/REW.

On the center unit:



Press ►►I or I◄◄.

Press I◄◄ to locate the beginning of the current chapter, title, or track. Press I◄◄ twice quickly to locate the beginning of the previous one.

Press ►►I to locate the beginning of the next chapter, title, or track.

Note:

- *When you play a Video CD with PBC function or a DVD disc, the center unit may locate different place, but it will generally locate the beginning of the title or chapter or track.*

Resuming playback

DVD Video CD

The center unit stores the position on a disc where you want to interrupt playback at, and resumes playback from that position later. To let work the resuming playback, the item RESUME in the SYSTEM menu must be set to ON beforehand. Otherwise, set it to OFF. See page 45.

To store the playback position

During playback, press STOP or AUDIO ⏻/| on the remote control.

Or

During playback, press ■ or ⏻/| on the center unit.

The center unit stores the position at which STOP or ■ is pressed, and the RESUME indicator on the display window is lit. The last stored memory overrides the previous memory.

Note:

- *The interrupted position is stored even when AUDIO ⏻/| on the remote control, or ⏻/| on the center unit, is pressed to switch power OFF (standby).*

To resume playback from the stored position

While stopped, press PLAY on the remote control or press ► on the center unit.

Playback begins from the stored position.

- When the center unit is in standby mode, you can activate resuming playback by pressing PLAY on the remote control.
- Changing the source during playback also stores the interrupted position. To resume playback from the stored position, press PLAY or DVD on the remote control. Selecting "DVD" by pressing SOURCE or pressing ► on the center unit will also resume playback.

Notes:

- *When you perform the resuming operation for a Video CD with the PBC function, the center unit may resume playback from a point slightly earlier than the resume point you stored.*
- *Resuming playback does not work for Audio CDs.*
- *Resuming playback does not work for program play and random play.*

To clear the stored position

To clear the stored position, perform one of the following operations:

The RESUME indicator on the display window will go out.

- Open the disc cover.
- While stopped, press STOP on the remote control or ■ on the center unit once again.
- In standby mode, press AUDIO ⏻/| on the remote control or ⏻/| on the center unit once again to turn on the system.

Selecting playback from the DVD menu

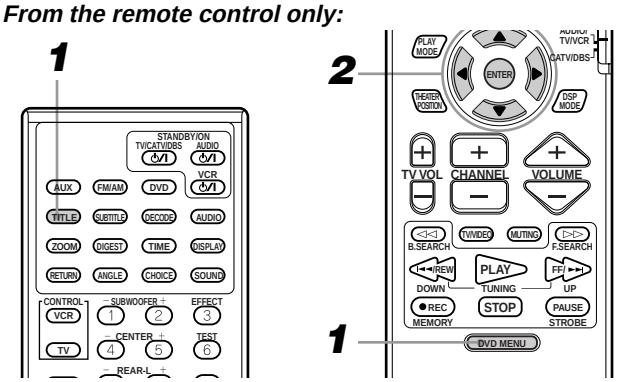
DVD

DVD discs generally have their own menus which show the disc contents. These menus contain various items such as titles of a movie, names or songs, or artist information, and display them on the TV.

You can locate a desired scene by using the menu.

❑ During playback

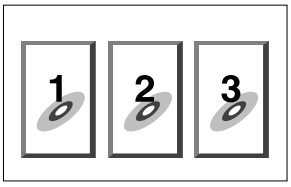
From the remote control only:



1 Press DVD MENU or TITLE.

The menu appears on the TV screen.

Example



2 Press the ◄/►/▲/▼ cursors to select a desired item, then press ENTER.

The center unit starts playback of the selected item.

- With some discs, you can also select items by entering the corresponding number using the number buttons, which may cause the unit to automatically start playback.

About menu

Normally, a DVD disc which contains more than one title may have a "title" menu which lists the titles. In this case, the menu appears on the TV by pressing TITLE. Some DVD discs may also have a different menu which appears by pressing DVD MENU. See the instructions of each DVD disc for its particular menu.

Notes:

- ***When ⊘ appears on the TV by pressing TITLE in step 1:***
  The disc does not have a menu listing the titles.
- ***When ⊘ appears on the TV by pressing DVD MENU in step 1:***
  The disc does not have a menu.

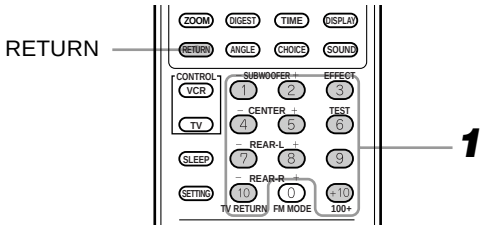
Selecting the location to view from the Video CD menu

Video CD

When playing back Video CDs recorded with PBC (playback control), a list of the recorded contents may appear on the TV as a menu. The location to view may be conveniently called up from this menu screen.

❑ When the menu appears on the TV during playback with PBC.

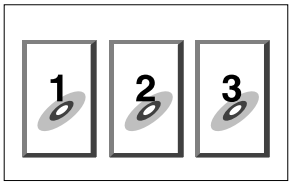
From the remote control only:



1 Use the number buttons (1~10, +10) to select the desired number of the item.

To select 3 on menu : Press 3.
To select 11 on menu : Press +10 → 1.
Playback starts from the selected item.

Example



Press RETURN to return to the menu screen.

When "NEXT" or "PREVIOUS" appears on the TV, the center unit generally works as follows:

- Pressing ►►| turns to the next page.
- Pressing |◄◄ returns to the previous page.

The method of the operation is different depending on the disc.

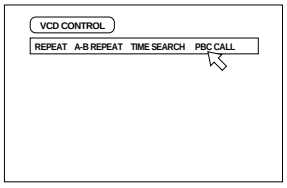
Activating the PBC function

To activate the PBC function when a PBC-compatible Video CD is being played back without the PBC function, press STOP then press PLAY.
When the PBC function is activated, "PBC" appears on the display window.

You can also activate the PBC function using the on-screen display as follows:

1. Press PLAY MODE.
2. Press the ◄/► cursors to move the pointer to [PBC CALL], then press ENTER.

During Video CD playback



Cancelling the PBC function

If you want to play back a PBC-compatible Video CD without activating the PBC function, start playback by using the number buttons instead of the PLAY button.

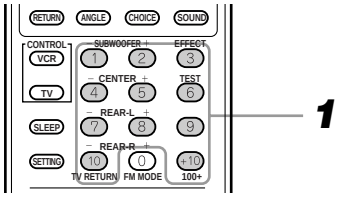
To specify the title, chapter, or track number for playback

DVD Audio CD Video CD

Use the number buttons to specify the title (DVDs) or track number (CDs) to begin playback from the desired location.

❑ For DVD: While stopped (for title playback)
During playing back a screen other than the menu screen (for chapter playback)
For Audio CD: During playback or while stopped
For Video CD: During playback without PBC function or while stopped

From the remote control only:



1 Press the number buttons (1~10, +10) to select the desired title, chapter, or track number.

Selecting numbers

Selecting 1~10:
Press the relevant button between 1 and 10.

Selecting 11 or higher:
To select 13: Press +10 → 3 .
To select 24: Press +10 → +10 → 4.
To select 40: Press +10 → +10 → +10 → 10.

The specified title, chapter, or track number appears on the display window, and playback begins from that location.

- You can also see the selected title, chapter, or track number on the on-screen display.

Notes:

- *When ⃠ appears on the TV.*
  The title, chapter, or track you have selected is not contained in the disc.
- *This function does not work during Video CD playback with PBC function.*

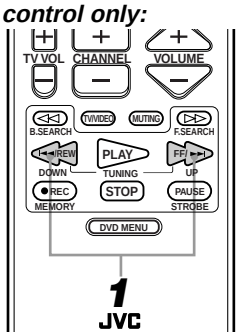
To play from the beginning of a title, chapter, or track

DVD Audio CD Video CD

The beginning of previous or later titles, chapters, or tracks may be skipped.

❑ For DVD: During playback
For Audio CD: During playback or while stopped
For Video CD: During playback without PBC function or while stopped

From the remote control only:



1 Press ▶▶| or |◀◀.

- Press ▶▶| the required number of times to move to a later title, chapter, or track.
- Press |◀◀ the required number of times to return to the previous title, chapter, or track.
- Press |◀◀ once to return to the beginning of the title, chapter, or track currently playing.

Notes:

- *Press ▶▶| or |◀◀ on the center unit for the same operation.*
- *This function may not work with some DVD discs.*
- *This function does not work during Video CD playback with PBC function.*

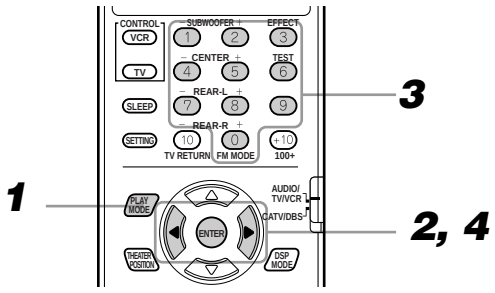
To specify the chapter number for playback [CHAP. SEARCH]

DVD

If the current title of a DVD disc being played is divided into chapters, you can skip to a desired chapter by specifying the chapter number using the on-screen display.

❑ During playback

From the remote control only:

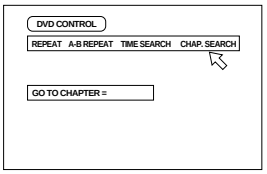


1 Press PLAY MODE.

The on-screen display appears on the TV.

2 Press the ◀/▶ cursors to move the pointer to [CHAP. SEARCH], then press ENTER.

"GO TO CHAPTER = " appears under the menu.



3 Press the number buttons (0 ~ 9) to enter the desired chapter number.

The selected chapter number appears in the message area.

Example:
To select chapter number 8: Press 8.
To select chapter number 37: Press 3 → 7.

4 Press ENTER.

The center unit starts playback from the selected chapter.

To return to the regular display
Press PLAY MODE again.

Notes:

- ***When the chapter number is incorrect in step 3:***
  Overwrite the incorrect number with the correct number.
- ***When ⃠ is displayed in the TV screen in step 4:***
  The chapter you have selected is not contained in the disc, or chapter search does not work on the disc.
- *With some discs, the center unit automatically starts searching for the chapter after entering the chapter number in step 3.*

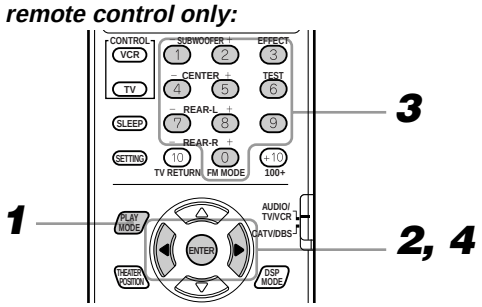
To specify the time for playback [TIME SEARCH]

DVD Audio CD Video CD

You can play a disc from the desired position by specifying the elapsed time from the beginning of the disc use the TIME SEARCH function.
Note that some DVD discs do not contain time information, and the TIME SEARCH function cannot be used.

❑ For DVD: During playback
For Audio CD: During playback
For Video CD: During playback without PBC function

From the remote control only:



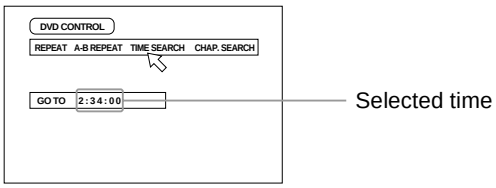
1 Press PLAY MODE.

The on-screen display appears on the TV.

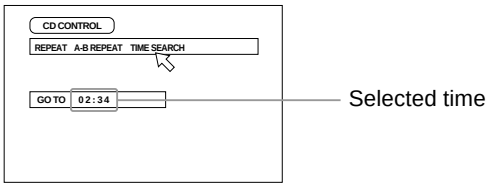
2 Press the ◄/► cursors to move the pointer to [TIME SEARCH], then press ENTER.

"GO TO" appears under the menu.

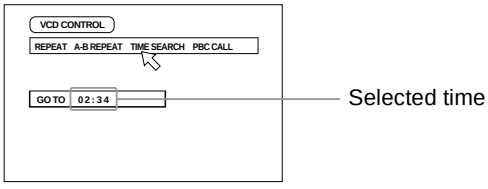
(for DVD)



(for Audio CD)



(for Video CD)



3 Use the number buttons (0~9) to enter the time.

The specified time appears in the message area.

Example (for DVD):
To playback from 2(H):34(M):00(S)

You do not have to press "0" to enter the trailing zeros (for the last two digits in the example). Of course, it is possible to enter them.

- You can specify the time in hour/minute/second format for DVD discs, and in minute/second format for Audio and Video CDs.

GO TO _ : :
↓ Press "2"
GO TO 2 : _ :
↓ Press "3"
GO TO 2 : 3 _ :
↓ Press "4"
GO TO 2 : 3 4 : _
↓
Press ENTER

When you make a mistake:
Press the ◄ cursor to move the cursor to an incorrect number and enter the correct number.

4 Press ENTER.

The center unit starts playback from the selected time.

To return to the regular display
Press PLAY MODE again.

Notes:

- ***When ⃠ appears on the TV in step 2:***
  The time you have selected is not contained on the disc, or the TIME SEARCH function does not work on the disc.
- *During program play or random play, the TIME SEARCH function does not work.*

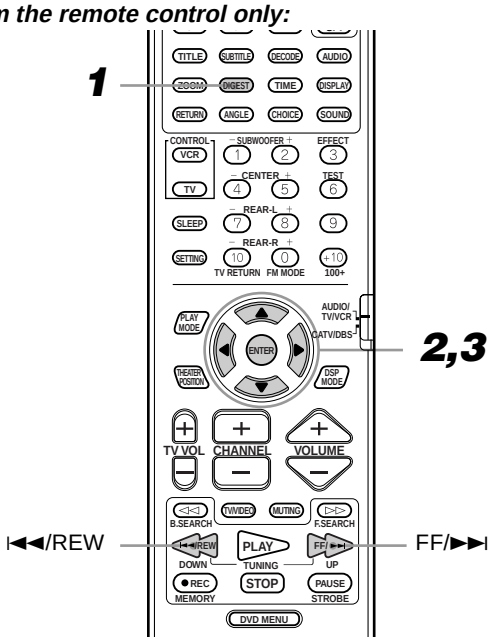
To select the screen for playback from the digest screen [DIGEST]

DVD Video CD

The center unit can display the opening scene of each title or chapter on a DVD or each track of a Video CD.
You can select a desired title, chapter or track from the opening scenes displayed on the TV.

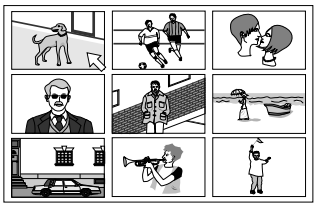
❑ For DVD: While stopped or during playback
For Video CD: While stopped or during playback without PBC function.

From the remote control only:



1 Press DIGEST.

- **DVD is stopped**
  Up to nine first scenes of each title may be displayed.
- **DVD is playing**
  Up to nine first scenes of each chapter in the current title may be displayed.
- **Video CD**
  Up to nine first scenes of each track may be displayed.



2 Press the ◄/►/▲/▼ cursors to select the desired title, chapter, or track.

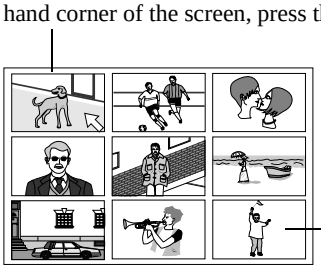
When the disc contains more than 9 titles, chapters, or tracks, the digest screen will have more than one page.
In this case, display a different page of the digest with the method described below.

To display the next page: Press ►►I.

To display the previous page: Press I◄◄.

Or

When the selected title, chapter or track is in the upper left-hand corner of the screen, press the ◄ cursor.



When the selected title, chapter, or track is in the lower right-hand corner for the screen, press the ► cursor.

3 Press ENTER.

The center unit starts playback from the selected title, chapter or track.

To return to the regular display before pressing ENTER in step 3:
Press DIGEST again.

Note:

- *With some discs, depending on the contents, it may take some time until all the scenes appear on the screen.*

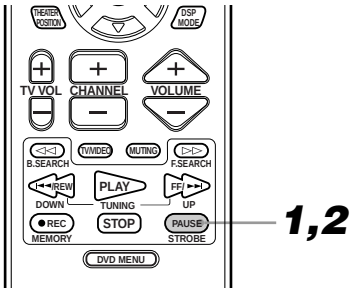
To advance the picture one frame at a time

DVD Video CD

Advancing a paused still picture one frame at a time.

❑ During playback

From the remote control:



1 Press PAUSE at the location at which the picture is to be advanced.

The picture is paused.

2 Press PAUSE again.

Each time you press PAUSE, the still picture advances to the next frame.

Press PLAY to return to normal playback.

Note:

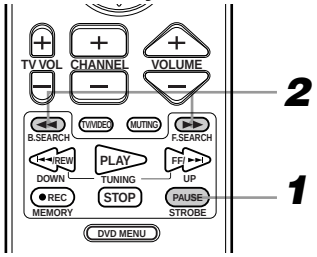
- *You can perform the above operation using ❚❚ button on the center unit.*

Slow-Motion Playback [SLOW]

DVD Video CD

❑ During playback

From the remote control only:



1 Press PAUSE at the section you wish to view in slow motion.

The image will pause.

2 Press ►► or ◄◄.

Pressing ►► will playback your selection in slow motion, starting from the paused frame.
Pressing ◄◄ will playback your selection in reverse slow motion (DVD only).
Each time you press either button during slow-motion, the playback speed will increase as follows:

Forward: 1/32 → 1/16 → 1/8 → 1/4 → 1/3 → 1/2
Reverse: 1/16 → 1/12 → 1/8 → 1/4 → 1/3

Pausing slow-motion playback
Press PAUSE to pause slow-motion playback.

Restoring regular playback
Press PLAY to resume normal playback.

Notes:

- *Audio is automatically muted during slow-motion playback.*
- *Video CDs cannot be played in reverse slow-motion.*

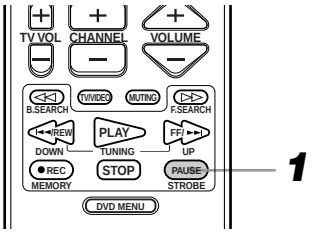
To display Continuous Photos [STROBE]

DVD Video CD

Nine still pictures may be displayed one after the other.

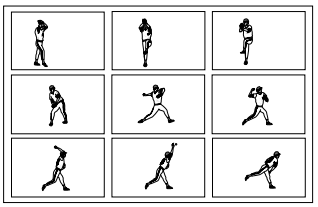
❑ During playback

From the remote control:



1 Press PAUSE continuously to display continuous photos.

When the screen appears displaying the nine pictures, release PAUSE.
The screen plays back the nine pictures in strobe-like action.



- Press PAUSE during strobe playback to pause.
- Press PAUSE to display the next nine still pictures.
- Press PLAY to resume strobe playback.

To clear the strobe screen, press PAUSE continuously until the normal screen appears.

Notes:

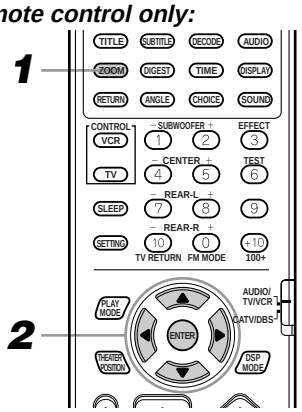
- *Audio is not played during strobe playback.*
- *You can perform the above operation using ❚❚ button on the center unit.*

Zooming a scene [ZOOM]

DVD Video CD

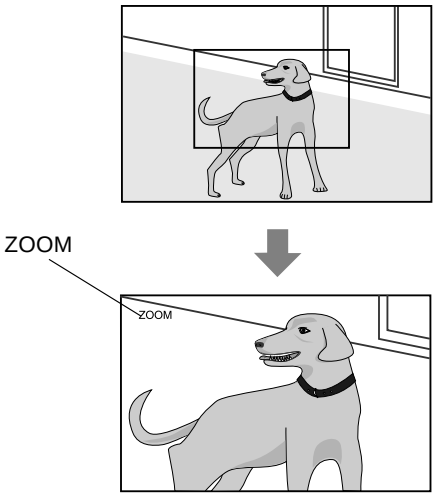
❑ During playback or while paused.

From the remote control only:

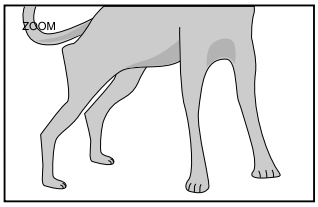


1 Press ZOOM.

"ZOOM" appears on the TV.
The unit zooms in to the center part of the scene to produce a double-sized image.



2 Press the ◄/►/▲/▼ cursors to move the zoomed-in scene.



To pause zoom play
Press PAUSE.
To resume zoom play, press PLAY.

To return to normal playback
Press ZOOM again.

Note:

- *During Zoom play, the picture may be garbled or noisy.*

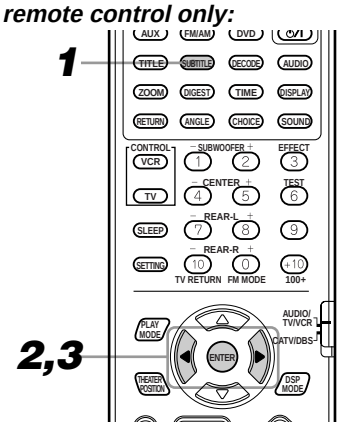
Changing the Subtitle Language [SUBTITLE]

DVD

Some DVD discs contain subtitles. With such discs, you can choose which kind of subtitles to display (or turn off subtitles entirely). At the beginning of subtitled parts, 💬 appears on the TV.

❑ During playback

From the remote control only:



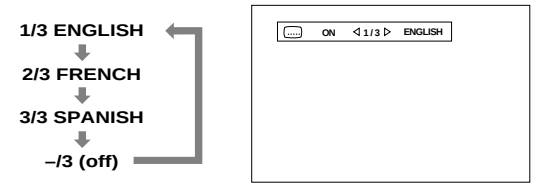
1 Press SUBTITLE.

The on-screen display appears on the TV.

2 Press the ◄/► cursors to select the desired subtitle.

Each time you press the ◄/► cursors, the subtitle changes.

Example:



3 Press ENTER.

The Subtitle selection display disappears on the TV.

Turning subtitles ON/OFF
Press SUBTITLE.
Pressing SUBTITLE toggles subtitle display ON and OFF.

Notes:

- ***When ⃠ appears on the TV:***
  You cannot select the subtitle.
- *The selected language may abbreviated on the TV. See "Appendix A: Table of languages and their abbreviations" in this manual.*
- *The Subtitle selection display will automatically disappear if you do not change the subtitle for 10 seconds.*

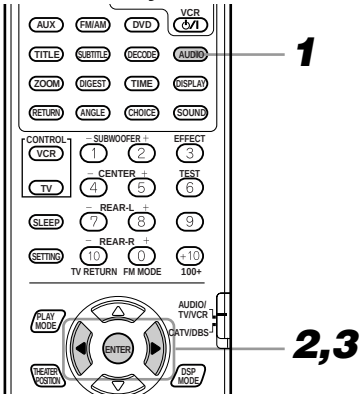
Changing the audio language or sound [AUDIO]

DVD

Some DVD discs contain multiple audio tracks. With such discs, you can choose which audio track to listen to during playback.
At the beginning of "multi-audio language" parts, ◯))) appears on the TV.

❑ During playback

From the remote control only:



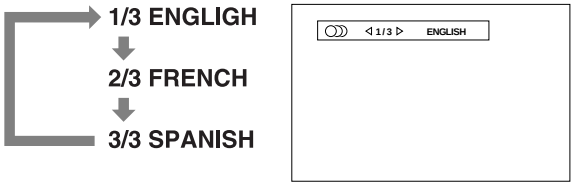
1 Press AUDIO.

The on-screen display appears on the TV.

2 Press AUDIO or the ◄/► cursors to select the desired audio language or sound.

Each time you press the button, the audio language or sound changes.

Example:



3 Press ENTER.

The Audio selection display disappears on the TV.

Notes:

- ***When ⊘ appears on the TV:***
  You cannot select the audio.
- *The selected language may abbreviated on the TV. See "Appendix A: Table of languages and their abbreviations" in this manual.*
- *The Audio selection display will automatically disappear if you do not change the subtitle for 10 seconds.*

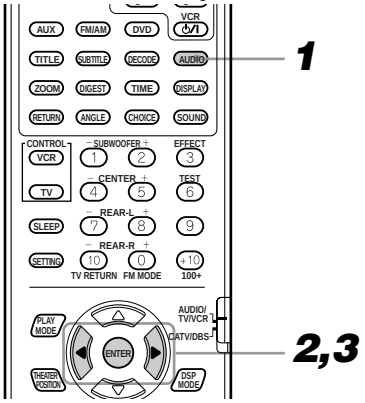
Changing the audio channel [AUDIO]

Video CD

For in some karaoke Video CDs, one of the audio channels includes a vocal while the other does not.
With such discs, you can choose to enjoy karaoke without the vocal or with the vocal by selecting the audio channel to be played back.

❑ During playback

From the remote control only:



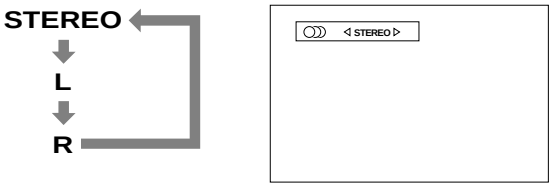
1 Press AUDIO.

The on-screen display appears on the TV.

2 Select the audio channel(s) to be played back using AUDIO or the ◄/► cursors.

Each time you press the button, the audio channel changes.

Example:



STEREO: You hear normal stereo playback.
L: You hear the L (Left) channel signal played back from both the left and right speakers.
R: You hear the R (Right) channel signal played back from both the left and right speakers.

3 Press ENTER.

The Audio selection display disappears on the TV.

Notes:

- ***When ⊘ appears on the TV:***
  You cannot select the audio.
- *The Audio selection display will automatically disappear if you do not change the subtitle for 10 seconds.*

Viewing from Multiple Angles [ANGLE]

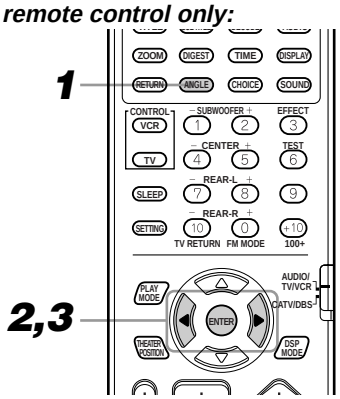
DVD

You can enjoy a variety of scene angles if the DVD disc contains "multi-angle" parts, where multiple cameras were used to shoot the same scene from different angles. You can select one of these viewing angles from the normal screen or on-screen display.
At the beginning of "multi-angle" parts, appears on the TV.

Using the ANGLE button

❑ During playback

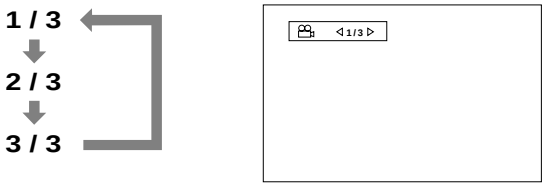
From the remote control only:



1 Press ANGLE.
The on-screen display appears on the TV.

2 Press ANGLE or the ◄/► cursors to select the desired angle.
Each time you press the button, the angle changes.

Example:



3 Press ENTER.
The Angle selection display disappears on the TV.

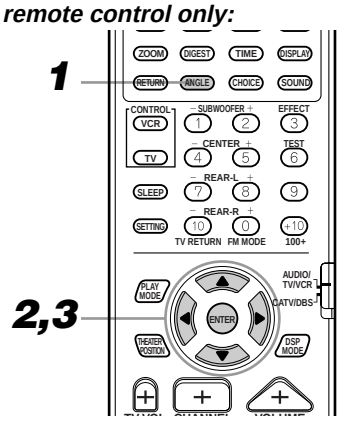
Note:

- ***When ⃠ appears on the TV:***
  The current scene is not recorded from multiple angles.
- *The Angle selection display will automatically disappear if you do not change the subtitle for 10 seconds.*

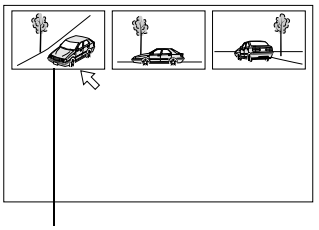
Selecting an angle from the angle list display

❑ During playback

From the remote control only:



1 Hold down ANGLE for more than 1 second.
Up to nine camera angles recorded on a disc appear on the TV.



The selected camera angle

2 Press the ◄/►/▲/▼ cursors to select the desired angle.

3 Press ENTER.
The selected angle appears on the TV.

Note:

- ***When ⃠ appears on the TV:***
  The current scene is not recorded from multiple angles.
- *During the operation above, audio is muted.*

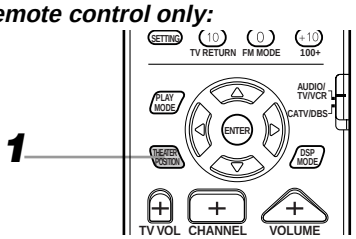
Selecting the Picture Character [THEATER POSITION]

DVD Video CD

You can select the quality of the image from among four options (OFF, 1, 2, and 3) according to the type of programming, picture tone or personal preferences.

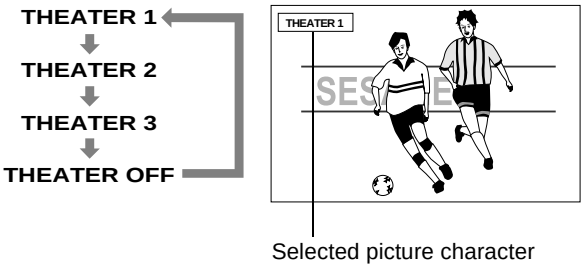
❑ During playback

From the remote control only:



1 Press THEATER POSITION to select the desired picture character.

Each time you press the button, the picture character changes as follows:



"THEATER OFF" is the normal position.
Selecting a higher number results in a darker picture character.

To turn off the on-screen display

Press ENTER.

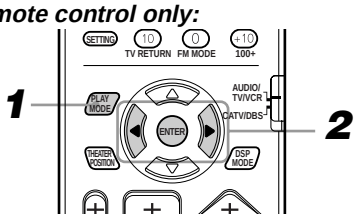
- The THEATER POSITION screen will automatically close if left idle for more than 5 seconds.

Repeating a current title, chapter or track, or all tracks [REPEAT]

DVD Audio CD Video CD

❑ For DVD: During playback
For Audio CD: During playback or while stopped
For Video CD: During playback without PBC function or while stopped

From the remote control only:



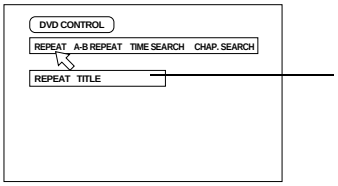
1 Press PLAY MODE.

The on-screen display appears on the TV.

2 Press the ◄/► cursors to move the pointer to [REPEAT], then press ENTER.

Each time you press ENTER, the repeat mode changes as follows:

For DVD

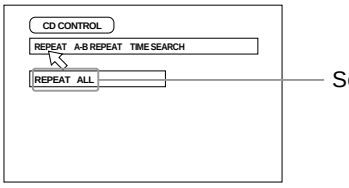


REPEAT TITLE (current title repeat)
↓
REPEAT CHAPTER (current chapter repeat)
↓
No indication (off)

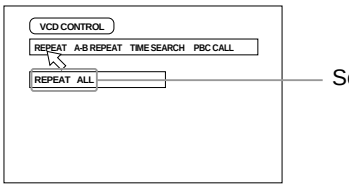
The current title or chapter will be repeated.

For Audio CD and Video CD

(for Audio CD)



(for Video CD)



REPEAT ALL (all track repeat)
↓
REPEAT 1 (current track repeat)
↓
No indication (off)

The current track or all tracks is/are played repeatedly.

To stop repeat playback
Press STOP.
- When a DVD disc is set, the center unit stops playback and quits repeat mode.
- When an Audio or Video CD is set, the center unit stops playback but remains in repeat mode.

To quit repeat playback without stopping playback
Move the pointer to [REPEAT] and press ENTER repeatedly until the [REPEAT] display turns off.

Tu turn off the on-screen display
Press PLAY MODE.

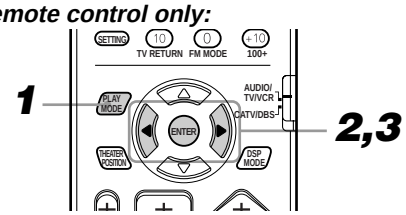
Notes:
- ***If ⃠ appears when pressing ENTER in step 2 during DVD playback.***
  You cannot repeat the title or chapter because of the disc contents.
- *With some DVD discs, repeat function does not work.*
- *Repeat play function cannot be used during Video CD playback with PBC function.*

Repeating a desired part [A-B REPEAT]

DVD Audio CD Video CD

❑ During playback

From the remote control only:

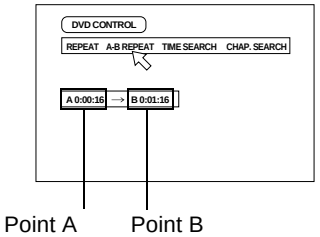


1 Press PLAY MODE.
The on-screen display appears on the TV.

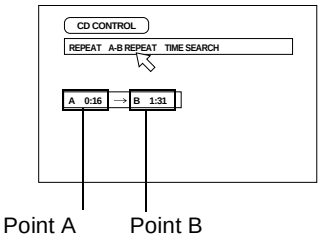
2 Press the ◄/► cursors to move the pointer to [A-B REPEAT], then press ENTER at the beginning of the part you want to repeat (point A).

3 Press ENTER at the end of the part you want to repeat (point B).
The unit locates “A” and starts repeat playback between “A” and “B”.

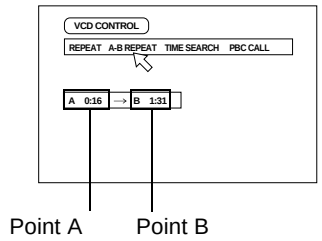
(for DVD)



(for Audio CD)



(for Video CD)



To quit A-B repeat playback
Press STOP. The center unit stops playback and quits A-B repeat mode.

Quitting A-B repeat mode without stopping playback
Move the pointer to [A-B REPEAT] and press ENTER.
Pressing the ⏮ or ⏭ will also quit A-B repeat mode.

To turn off the on-screen display
Press PLAY MODE.

Notes:
- ***If ⃠ appears when pressing ENTER in step 2 during DVD playback.***
  You cannot repeat the selected portion because of the disc contents.
- *The A-B REPEAT function cannot be used during program or random playback.*
- *With DVD discs, A-B repeat playback is possible only within a single title.*

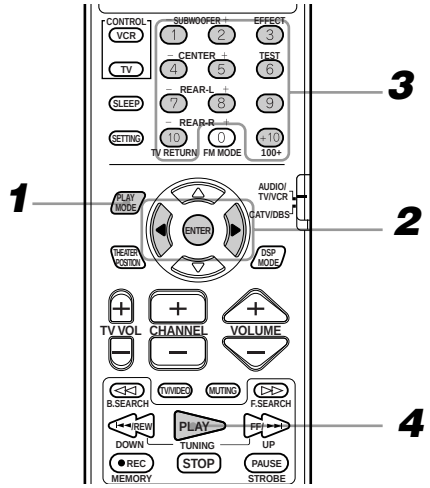
Programming the Playing Order [PROGRAM]

DVD Audio CD Video CD

You can play titles or tracks on a disc in the desired order using the Program function.

❑ While stopped

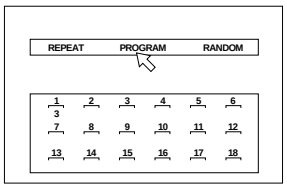
From the remote control only:



1 Press PLAY MODE.

The on-screen display appears on the TV.

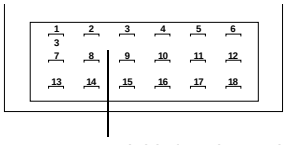
2 Press the ◄/► cursors to move the pointer to [PROGRAM] and press ENTER.



The program table appears under the menu bar (as shown above).
The PROGRAM indicator appears on the display window.

3 Select the titles or tracks in the desired order using the number buttons (1~10, +10).

Up to 18 titles or tracks can be programmed. You may select the same titles or track more than once.



The programmed title/track number is shown under each program number.

Selecting numbers

Selecting 1~10:
Press the relevant button between 1 and 10.

Selecting 11 or higher:
To select 13: Press +10 ➞ 3 .
To select 24: Press +10 ➞ +10 ➞ 4.
To select 40: Press +10 ➞ + 10 ➞ +10 ➞ 10.

If you mistakenly select the wrong title or track number press STOP to delete the entered program.
Then re-select the titles or tracks you wish.

4 Press PLAY to start program play.

When all of the programmed titles or tracks have finished playback, the center unit stops. Since the program remains, program playback can be used again.

- You can use repeat playback together with program playback for DVDs, Audio CDs and Video CDs. Select REPEAT ALL to repeatedly play back the all programmed tracks. For details, see page 34.

To turn off the on-screen display
Press PLAY MODE.

To quit program playback and clear the program
Press STOP and then PLAY MODE to display the on-screen on the TV. Then, press STOP once again. Now, the program is cleared. Then, press ENTER.
The PROGRAM indicator on the display window goes off.
Turning off the power, switching source, or opening the disc cover will also clear the program.

To temporarily exit program playback and clear the program
There are two ways to do this operation:

- While stopped and the on-screen play mode menu is not displayed on TV, press STOP.
- While stopped, press PLAY MODE to display the on-screen on the TV. Then, move the pointer to [PROGRAM] and press ENTER to exit the program playback. Since the program remains, program playback can be used again.

Notes:

- *With some DVD discs, program playback does not work.*
- *During program playback, you can skip to the next title or track by pressing ►►I. Also, you can skip back to the beginning of the current title or track by pressing I◄◄. (You cannot skip back to the previous title or track.)*
- *During program playback, you can see the current title or track by pressing the PLAY MODE. The current title or track illuminates in yellow on the on-screen display. (To turn off the on-screen display, press PLAY MODE again.)*

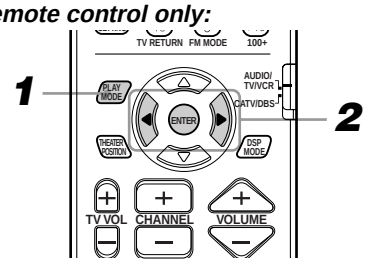
Random Play [RANDOM]

DVD Audio CD Video CD

You can play titles or tracks in random order.

❑ While stopped

From the remote control only:

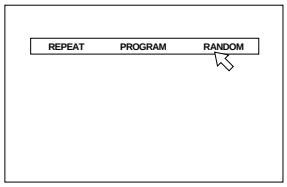


1 Press PLAY MODE.

The on-screen display appears on the TV.

2 Press the ◄/► cursors to move the pointer to [RANDOM] and press ENTER.

"RANDOM" appears on the display window, and random playback begins.



- When all tracks have been played once, random play ends.
- You can use repeat playback together with random playback. Select REPEAT ALL to repeatedly play back the all tracks on the disc. For details, see page 34.

To quit random playback

Press STOP.

Note:

- *The same track will not be played back more than once during random play.*

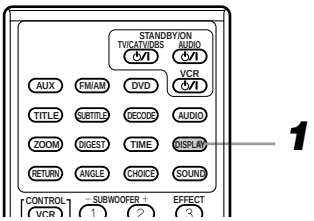
To check the DVD function status

DVD

You can check the DVD function status of the DVD disc.

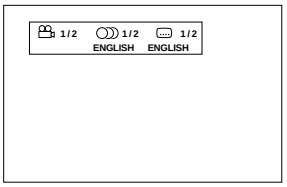
❑ During DVD playback

From the remote control only:



1 Press DISPLAY once.

The on-screen display appears on the TV, and the current selections of the camera angle, audio language and subtitle language are displayed.



To turn off the DVD function status display

Press DISPLAY twice.

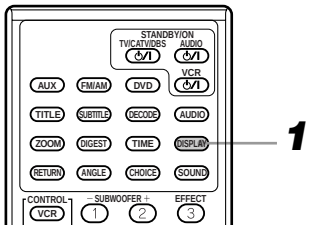
To check the disc information

DVD Audio CD Video CD

You can check the disc information of the disc.

❑ During playback

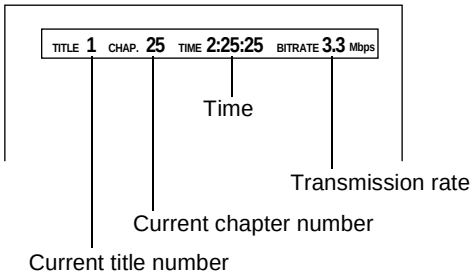
From the remote control only:



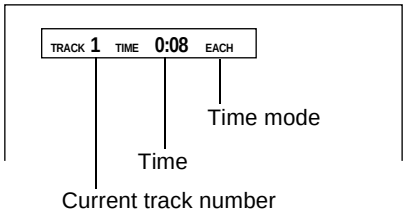
1 Press DISPLAY once for a Audio CD or Video CD, or twice for a DVD disc.

The disc information display appears on the TV.

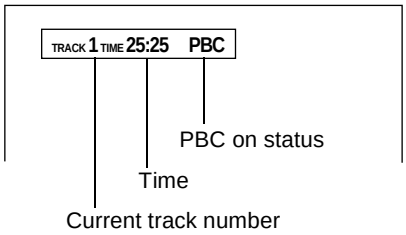
(for DVD)



(for Audio CD or Video CD playing without PBC)



(for Video CD playing with PBC)



To turn off the on-screen display

Press DISPLAY again.

Note:

- *With DVD discs, you can directly enter the disc information on-screen by pressing TIME during playback.*

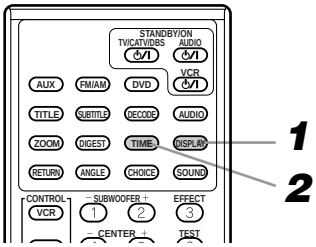
To check the time information

Audio CD Video CD

You can check the time information of the disc.

❑ For Audio CD: During playback
For Video CD: During playback without PBC function.

From the remote control only:



1 Press DISPLAY once.

The time information display appears on the TV.

2 Press TIME.

Each time you press the button, the time indication changes as follows:

For Audio CD

EACH
(current track elapsed time)
↓
EACH REMAIN
(current track remaining time)
↓
TOTAL
(disc elapsed time)
↓
TOTAL REMAIN
(disc remaining time)

For Video CD playing without PBC

EACH
(current track elapsed time)
↓
EACH REMAIN
(current track remaining time)

The selected time information is displayed on the TV, as well as on the display window.

To turn off the on-screen display

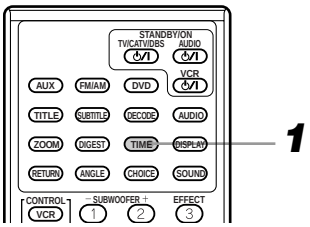
Press DISPLAY again.

To check time on the display window

You can check the time information on the display window, rather than using the on-screen menu.

❑ During playback or while stopped

From the remote control only:



1 Press TIME repeatedly.

Each time you press the button, the time indication changes as follows:

→ EACH → EACH REMAIN → No indication (TOTAL) → REMAIN → (back to the beginning)

The time indicator (REMAIN/EACH) lights up on the display window.

During playback

REMAIN: Disc remaining time
TOTAL: Disc elapsed time
EACH: Current track elapsed time
EACH REMAIN: Current track remaining time

While stopped

REMAIN: Total playback time of the disc
EACH/TOTAL: 0:00
EACH REMAIN: Playback time of the current track
By pressing ►►I or I◄◄, playback time for other tracks can be check.

Receiving radio broadcasts

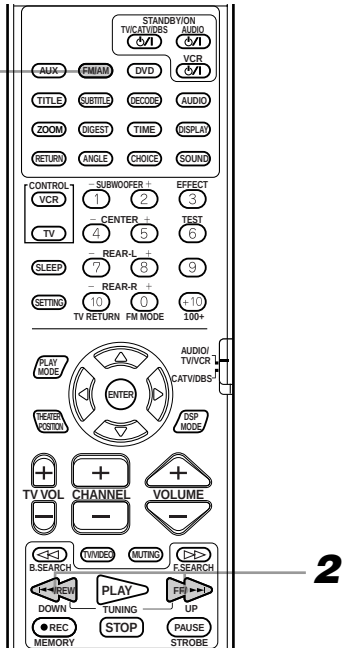
You can browse through all the stations or use the preset function to go immediately to a particular station.

IMPORTANT

When using the remote control, check to see if its remote control mode selector is set to the correct position: To operate this unit, set it to "AUDIO/TV/VCR" (except when selecting the DBS tuner as the source).

Tuning in stations manually

From the remote control only:



1 Press FM/AM to select the band.

Each time you press the button, the band alternates between FM and AM.

2 Press TUNING UP (FF/▶▶|) or TUNING DOWN (|◀◀/REW) repeatedly until you find the frequency you want.

- When you hold down the button, the frequency keeps changing. When you releases the button, tuning automatically stops at the next station of sufficient signal strength.

You can use the sound effect, if you want. See "Using the DSP Modes [DSP MODE]" on page 20.

Note:

- *When a station of sufficient signal strength is tuned in, the TUNED indicator lights up on the display window.*
- *When an FM stereo program is received, the STEREO indicator also lights up.*
- *On the unit, FM and AM can be selected by repeatedly pressing SOURCE. The frequency last tuned appears on the display window, but you cannot tune in to the other station using ▶▶| or |◀◀ on the center unit.*

Using preset tuning

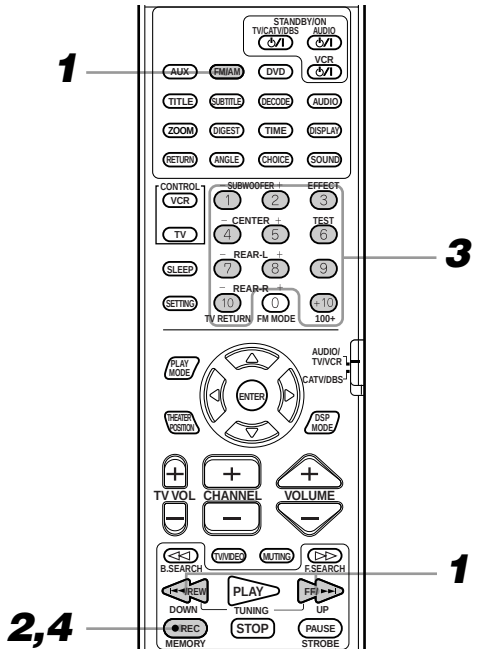
Once a station is assigned to a channel number, the station can be quickly tuned. You can preset up to 30 FM and 15 AM stations.

To store the preset stations

Before you start, remember...

- There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step 1 again.

From the remote control only:



1 Tune in the station you want to preset (see "Tuning in stations manually").

If you want to store the FM reception mode for this stations, select the FM reception mode you want. See "Selecting the FM reception mode" on page 41.

2 Press MEMORY (● REC).

"CH - -" flashes and the channel number position starts flashing on the display window for about 10 seconds.

3 Use the number buttons (1~10, +10) to select a channel number while the channel number position is flashing.

- For channel number 5, press 5.
- For channel number 15, press +10 → 5.
- For channel number 20, press +10 → 10.
- For channel number 30, press +10 → +10 → 10.

4 Press MEMORY (● REC) again while the selected channel number is flashing .

The selected channel number stops flashing.
The station is assigned to the selected channel number.

5 Repeat steps 1 to 4 until you store all the stations you want.

To erase a stored preset station

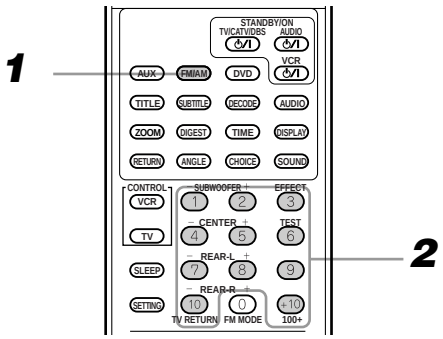
Storing a new station on a used number erases the previously stored one.

Note:

- *The preset stations will be erased in a few days, if the system is unplugged or power failure occurs.*

To tune in a preset station

From the remote control only:



1 Press FM/AM.

Each time you press the button, the band alternates between FM and AM.

2 Press the number buttons (1~10, +10) to select a preset channel number.

- For channel number 5, press 5.
- For channel number 15, press +10 → 5.
- For channel number 20, press +10 → 10.
- For channel number 30, press +10 → +10 → 10.

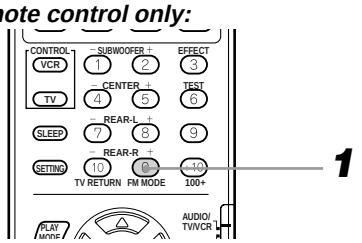
Selecting the FM reception mode

When an FM stereo broadcast is hard to receive or noisy

You can change the FM reception mode while receiving an FM broadcast.

- You can store the FM reception mode for each preset station.

From the remote control only:



1 Press FM MODE.

Each time you press the button, the FM reception mode alternates between "AUTO" and "MONO."

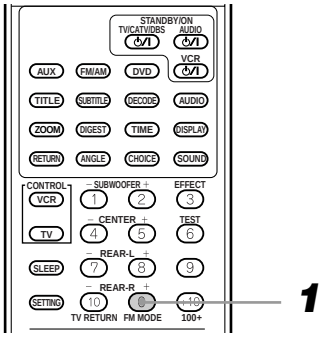
AUTO: "AUTO MUTING" appears on the display window and the AUTO MUTING indicator lights up on the display window.
When a program is broadcasted in stereo, you will hear stereo sound; when in monaural, you will hear monaural sounds. This mode is also useful to suppress static noise between stations.

MONO: "MONO" appears on the display window and the AUTO MUTING indicator goes off on the display window.
Reception will be improved although you will lose the stereo effect. In this mode, you will hear noise while tuning into the stations.

Beat cut

When listening to an AM broadcast with a lot of noise interference, you can change the BEAT CUT mode to reduce the noise.

From the remote control only:



1 Press FM MODE.

Each time you press the button, operation toggles between "BEAT CUT 1" and "BEAT CUT 2" on the display window. Choose the setting that gives clearer sound.

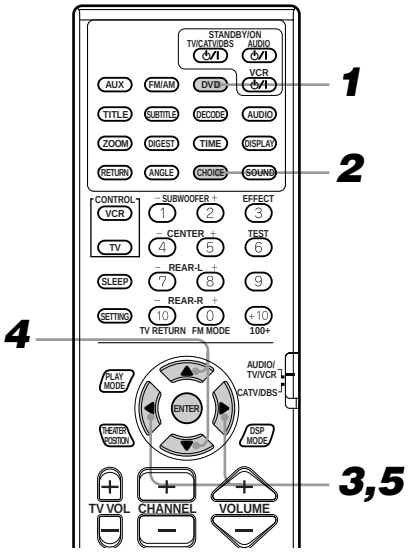
Preference settings

You can set various preferences for playback via three dedicated on-screen displays.

Using the preference setting menus

The procedure how to set the preferences is explained here.

From the remote control only:



1 Press DVD.

If no disc is inserted, proceed to the next step.
If a DVD or Video CD disc is inserted, press STOP.
If an Audio CD disc is inserted, remove it.

2 Press CHOICE.

One of the preference menus appears on the TV.
There are three preference menus: LANGUAGE, DISPLAY and SYSTEM.

3 Move the pointer to the desired tab using the ◄/► cursors.

The selected preference menu opens.

4 Move the pointer to the desired item using the ▲/▼ cursors.

5 Press the ◄/► cursors to select the desired option in the item.

When you select one of options, it is set for the item.

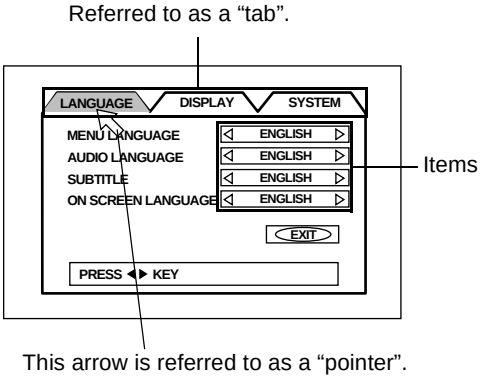
6 Repeat settings for other items.

- To continue settings in the same menu screen, repeat steps 4 and 5.
- To change the menu screen, press the ▲/▼ cursors until the pointer moves to the tab.

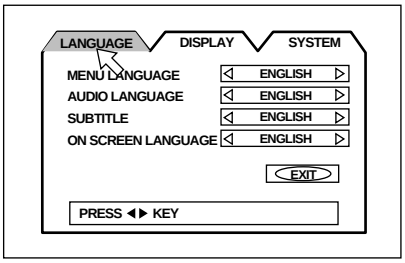
To close the preference menu screen

Press CHOICE again.
Or
Move the pointer to "EXIT" by pressing the ▲/▼ cursors, then press ENTER.

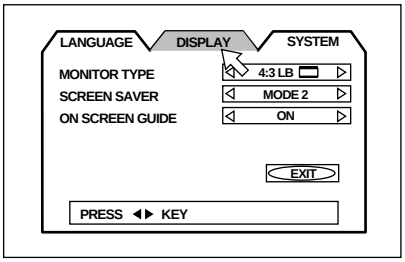
On-screen menu components



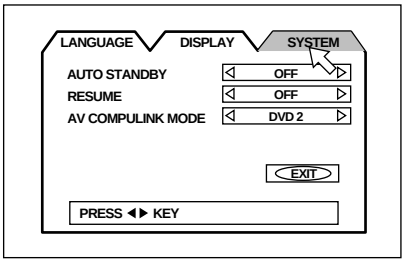
LANGUAGE



DISPLAY



SYSTEM



LANGUAGE MENU settings

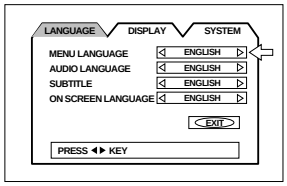
Choosing menu language

Some DVD discs feature menu display in multiple languages. With these discs, it is possible to set the default language for menu display.

1 Open the LANGUAGE menu.

See "Using the preference setting menus" on page 42.

2 Move the pointer to MENU LANGUAGE using the ▲/▼ cursors.



3 Press the ◄/► cursors to select a default menu language.

Pressing the cursors toggles between the following options.
⇔ ENGLISH ⇔ SPANISH ⇔ FRENCH ⇔ CHINESE ⇔ GERMAN ⇔ ITALIAN ⇔ JAPANESE ⇔ language code (AA ~ ZU) ⇔
(See "Appendix A: Table of languages and their abbreviations".)

Note:

- *When the selected language is not available on the disc, display will switch to an available language.*

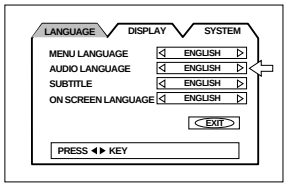
Choosing audio language

Some DVD discs feature audio playback in multiple languages. With these discs, it is possible to set the default language for audio playback.

1 Open the LANGUAGE menu.

See "Using the preference setting menus" on page 42.

2 Move the pointer to AUDIO LANGUAGE using the ▲/▼ cursors.



3 Press the ◄/► cursors to select a default menu language.

Pressing the cursors toggles between the following options.
⇔ ENGLISH ⇔ SPANISH ⇔ FRENCH ⇔ CHINESE ⇔ GERMAN ⇔ ITALIAN ⇔ JAPANESE ⇔ language code (AA ~ ZU) ⇔
(See "Appendix A: Table of languages and their abbreviations".)

Note:

- *When the selected language is not available on the disc, audio playback will switch to an available language.*

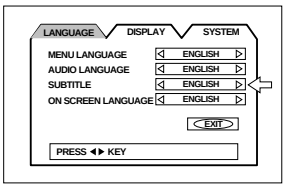
Choosing subtitle language

Some DVD discs feature subtitle display in multiple languages. With these discs, it is possible to set the default language for subtitle display.

1 Open the LANGUAGE menu.

See "Using the preference setting menus" on page 42.

2 Move the pointer to SUBTITLE LANGUAGE using the ▲/▼ cursors.



3 Press the ◄/► cursors to select a default menu language.

Pressing the cursors toggles between the following options.
⇔ ENGLISH ⇔ SPANISH ⇔ FRENCH ⇔ CHINESE ⇔ GERMAN ⇔ ITALIAN ⇔ JAPANESE ⇔ language code (AA ~ ZU) ⇔
(See "Appendix A: Table of languages and their abbreviations".)

Note:

- *When the selected language is not available on the disc, subtitle display will switch to an available language.*

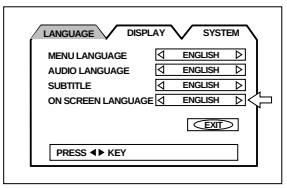
Choosing on-screen language

You can select the on-screen display language to be displayed.

1 Open the LANGUAGE menu.

See "Using the preference setting menus" on page 42.

2 Move the pointer to ON SCREEN LANGUAGE using the ▲/▼ cursors.

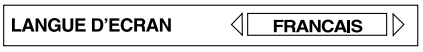


3 Press the ◄/► cursors to select the on-screen language you want to display.

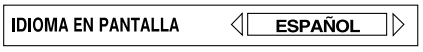
ENGLISH
⇕
FRANCAIS (French)
⇕
ESPAÑOL (Spanish)

English

French



Spanish



DISPLAY MENU settings

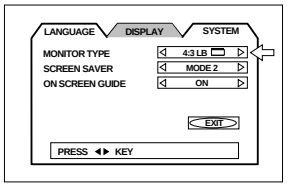
Select monitor type

Most movie DVD discs are recorded for wide-screen TVs with a height/width ratio of 16:9. It is possible to optimize playback of these wide-screen TV images for viewing on a regular TV with a height/width ratio of 4:3.

1 Open the DISPLAY menu.

See "Using the preference setting menus" on page 42.

2 Move the pointer to MONITOR TYPE using the ▲/▼ cursors.



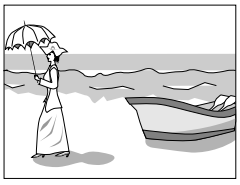
3 Press the ◄/► cursors to select monitor type.

Pressing the cursors toggles between the following monitor configurations.

4:3 LB (Letter Box Conversion):

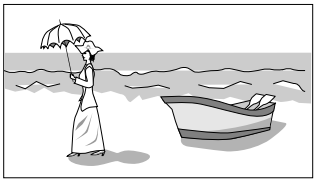
Select this option for playback on a TV with a height/width ratio of 4:3.
The image will be displayed with a black bar at the top and bottom of the screen. The left and right edges of the image are preserved.

4:3 PS (Pan-scan Conversion):



Select this option for playback on a TV with a height/width ratio of 4:3.
The image will be displayed with the right and left edges cropped. No black gap will appear at the top and bottom of the screen.

16:9 WIDE (Wide Television Screen 16:9):



Select this option for playback on a wide-screen TV.

Note:

- *If the DVD disc is not optimized for Pan-scan, the image will be shown in 4:3 LB (Letter Box Conversion), even if 4:3 PS (Pan-scan Conversion) is selected.*

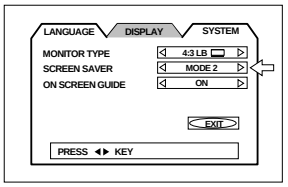
Screen saver settings

Set the screen saver to prevent screen burn.

1 Open the DISPLAY menu.

See "Using the preference setting menus" on page 42.

2 Move the pointer to SCREEN SAVER using the ▲/▼ cursors.



3 Press the ◄/► cursors to select a screen saver mode.

Pressing the cursors toggles between the following screen saver modes:

MODE 1: The picture gets dark.

MODE 2: The "screen saver" picture appears and its brightness changes.

OFF: The screen saver function is off.

Notes:

- *Please be wary of screen burn when the screen saver is turned OFF.*
- *The screen saver function does not work for Audio CDs.*

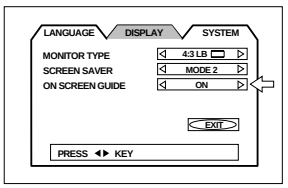
On-screen guide settings

During DVD playback, an on-screen guide displaying symbols or letters over the DVD image can be set ON or OFF.

1 Open the DISPLAY menu.

See "Using the preference setting menus" on page 42.

2 Move the pointer to ON SCREEN GUIDE using the ▲/▼ cursors.



3 Press the ◄/► cursors to select ON or OFF.

Pressing the cursors toggles between ON and OFF.

ON: Icons and letters are displayed.

OFF: Icons and letters are not displayed.

Examples of "on-screen guide" icons or characters:

SYSTEM MENU setting

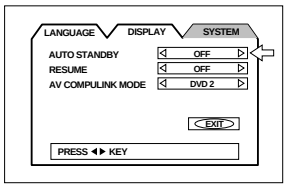
AUTO STANDBY

When the system is stopped for more than 30 minutes or 60 minutes in the source DVD, the system enters standby mode automatically.

1 Open the SYSTEM menu.

See “Using the preference setting menus” on page 42.

2 Move the pointer to AUTO STANDBY using the ▲/▼ cursors.



3 Press the ◄/► cursors to select the time.

Pressing the cursor toggles between the following options:

60: Time is set to 60 minutes.

30: Time is set to 30 minutes.

OFF: The auto standby function is off.

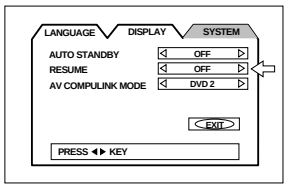
RESUME

You can select the resume function to be on or off. See page 25.

1 Open the SYSTEM menu.

See “Using the preference setting menus” on page 42.

2 Move the pointer to RESUME using the ▲/▼ cursors.



3 Press the ◄/► cursors to select ON or OFF.

Pressing the cursor toggles between “ON” and “OFF”.

ON: Pressing PLAY while stopped or on standby starts playback from the resume point if it is memorized.

OFF: Pressing PLAY while stopped or on standby starts playback from the beginning of the disc.

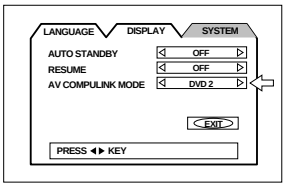
AV COMPULINK MODE

If you use the AV Compulink system, you must set this item correctly.

1 Open the SYSTEM menu.

See “Using the preference setting menus” on page 42.

2 Move the pointer to AV COMPULINK MODE using the ▲/▼ cursors.



3 Press the ◄/► cursors to select DVD1, DVD2 or DVD3.

Select “DVD1,” “DVD2” or “DVD3” according to the equipment to be connected. See page 53.

Note:

- *If you do not use the AV Compulink system, this setting is not necessary.*

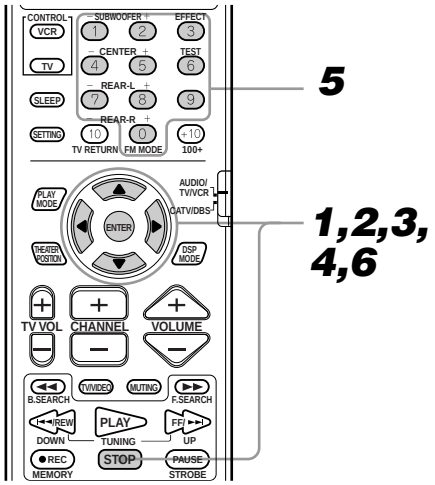
Limiting playback by children

This function restricts playback of DVD discs which contain violent (and other) scenes according to the level set by the user.
For example, if a movie which includes violent scenes supports the parental lock feature, such scenes which you do not want to let children view can be cut or replaced with other scenes.

To set Parental Lock for the first time [PARENTAL LOCK]

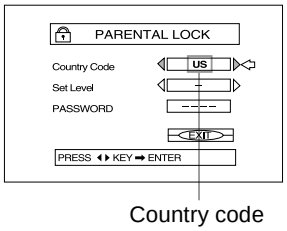
❑ While a DVD disc is stopped or no disc is inserted

From the remote control only:



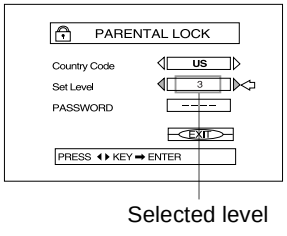
1 Press ENTER while holding down STOP.
The PARENTAL LOCK on-screen display appears on the TV.

2 Press the ▲/▼ cursors to move the pointer to "Country Code", then press the ◄/► cursors to select "US" for country code and press ENTER or the ▼ cursor.
(See "Appendix B: Country code list for parental lock".)



Country code

3 Press the ▲/▼ cursors to move the pointer to "Set Level", then press the ◄/► cursors to select the parental lock level.
Each time you press the ◄/► cursors, the parental level changes as follows:
➞ **"1" ~ "8" ➞ "—" (No restriction) ➞** (back to the beginning)

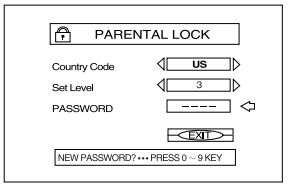


Selected level

- "1" is the strictest level.
  Discs rated higher than the level you selected are restricted.

4 Press ENTER or the ▼ cursor.

5 Enter your 4-digit password using the number buttons (0~9).



If you enter an undesired password, reenter the password.

6 Press ENTER.
The parental level and password are set.
The pointer moves to "EXIT".

To turn off the PARENTAL LOCK on-screen display

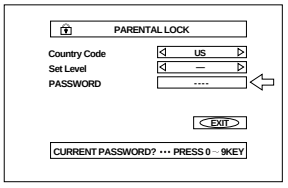
Press ENTER again.

To change the settings

❑ While a DVD disc is stopped or no disc is inserted

1 Press ENTER while holding down STOP.
The Parental Lock on-screen display appears on the TV.

2 Enter your current 4-digit password using the number buttons (0 to 9) and press ENTER.
If you enter the wrong password, "WRONG! RETRY……" appears on the TV, and you cannot go to next step.



3 Use the ▲/▼ cursors to move the pointer to "Set Level", then use the ◄/► cursors to select the parental lock level.

4 Press ENTER.

5 Enter your new 4-digit password using the number buttons (0 to 9) and press ENTER.
The new setting is effective.

To turn off the PARENTAL LOCK on-screen display

Press ENTER again.

Notes:

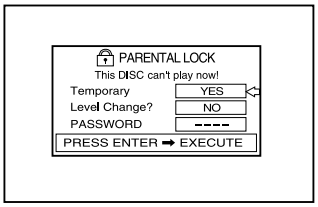
- *When you enter the wrong password more than 3 times in step 2 above, the pointer moves to "EXIT" automatically and the ▲/▼ cursors do not work. Press EXIT to exit Parental Lock on-screen and repeat from the first step.*
- *If you forget your password in step 2, enter "8888."*

To temporarily release the Parental lock

When you set the parental level strictly, some discs may not be played back at all. When you insert such a disc and try to play it, the Parental Lock on-screen display appears on the TV, and the unit will ask you whether you want the parental lock to be temporarily released or not.

1 Use the ▲/▼ cursors to move the pointer to select YES or NO, then press ENTER.

If you select YES, the pointer moves to the PASSWORD field. When selecting NO, remove the disc.



2 Enter your 4-digit password using the number buttons (0 to 9).

If you enter the wrong password, “WRONG! RETRY…” appears on the TV, and you cannot go to next step.

- The Parental lock is released, and the center unit starts playback.

Note:

- *When you enter the wrong password more than 3 times in step 2 above, the pointer moves to “NO” automatically and the ▲/▼ cursors do not work. Press EXIT to exit Parental Lock on-screen and remove the disc.*

Amplifier settings

Perform amplifier settings (balance, tone, speaker size and delay time, crossover frequency, LFE (Low Frequency Effect) level and dynamic range) for the powered sub-woofer unit to obtain optimum listening performance.

Note:

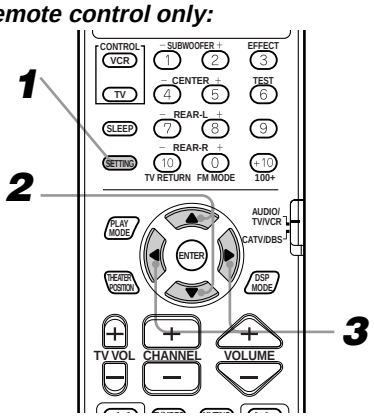
- *Before starting settings, be sure that each speaker is properly installed and your listening position is fixed, since some setting items should be changed according to your listening position with respect to the installed speakers.*

Basic operation for setting amplifier

The basic operation for setting each item is as follows:

❑ While stopped or during playback

From the remote control only:



1 Press SETTING.

The system enters power amplifier setting mode and the setting item you have lastly selected appears on the display window.

2 Press the ▲/▼ cursors to select the desired item.

Each time you press the button, the setting item shown on the display window changes as follows:

⟷ L/R BALANCE ⟷ BASS ⟷ TREBLE ⟷ FRONT SPK ⟷ CENTER SPK ⟷ REAR SPK ⟷ CENTER DELAY ⟷ REAR DELAY ⟷ CROSSOVER ⟷ LFE ATT. ⟷ D.RANGE COMP. ⟷

L/R BALANCE
Balance between the right and left front speakers

BASS
Bass (low frequency sound) for the front speakers

TREBLE
Treble (high frequency sound) for the front speakers

FRONT SPK*
Setting the size of the front speakers

CENTER SPK*
Setting the size of the center speaker

REAR SPK*
Setting the size of the rear speakers

CENTER DELAY
Setting the delay time for the center speaker

REAR DELAY
Setting the delay time for the rear speakers

CROSSOVER*
When using a small speaker with weak bass as a front, center or rear speaker, you can redirect bass audio to the sub-woofer.

LFE ATT. LFE (Low Frequency Effect) attenuator
When bass sound is distorted while playing back the program recorded in Dolby Digital or DTS surround, you can lower the sound level using LFE attenuator.

D.RANGE COMP.
You can compress the dynamic range. This may be used when you play back surround effects at night. This function work only for the program recorded in Dolby Digital.

** When you use the supplied speakers with this system, you do not need to change the initial settings for these items.*

3 Press the ◄/► cursors to select the desired option.

When you select one of options, it is set for the item.

To exit power amplifier setting mode
Press SETTING again.

Setting balance

Adjust the balance between the front L/R speakers.

1 Press SETTING.

The system enters power amplifier setting mode and the setting item you have lastly selected appears on the display window.

2 Press the ▲/▼ cursors until "L/R BALANCE" appears on the display window.

L/R BALANCE

- After a while, the current setting appears.

3 Within 5 seconds, press the ◄/► cursors to adjust the balance.

Each time you press the button, the balance level changes as follows:
R-21 to R-1 ⟷ CNTR ⟷ L-1 to L-21

- **R-21 to R-1:** The output from the right speaker decreases. (R-21: R channel signal is muted.)
- **CNTR:** The outputs from both speakers are the same.
- **L-1 to L-21:** The output from the left speaker decreases. (L-21: L channel signal is muted.)

Holding down the button continuously changes the level.

To exit power amplifier setting mode
Press SETTING again.

Setting tone

Adjust the tone (bass and treble) for the front speakers.

1 Press SETTING.

2 Press the ▲/▼ cursors until "BASS" or "TREBLE" appears on the display.

- After a while, the current setting value appears.

3 Within 5 seconds, press the ◄/► cursors to adjust the bass or treble.

Each time you press the button, the setting value changes 2 steps at a time between –10 and +10. (0: flat level)
Holding down the button continuously changes the value.

To exit power amplifier setting mode
Press SETTING again.

Setting speaker size

Select the speaker size according to the speakers you are using.
- When you use the supplied speakers with this system, set the speaker size as follows:
  FRONT SPK: SMALL
  CENTER SPK: SMALL
  REAR SPK: SMALL

CAUTION:

When using this system's front, center, or rear speakers, select "SMALL" for each.
Selecting "LARGE" may result in speaker damage.

1 Press SETTING.

2 Press the ▲/▼ cursors until the following item appears on the display window.

- **FRONT SPK**
  For setting the left and right front speaker size
- **CENTER SPK**
  For setting the center speaker size
- **REAR SPK**
  For setting the left and right rear speaker size

- After a while, the current setting appears.

3 Within 5 seconds, press the ◄/► cursors to select the speaker size.

Select "LARGE" when the cone speaker imbedded in the speaker being used has a diameter of 12 cm or more.
Select "SMALL" when the diameter is less than 12 cm.
Select "NONE" when the speaker is not connected, or is not in use.
- When the speakers supplied with this system are used, select "SMALL" for each speaker.

- **FRONT SPK**
  Pressing the button toggles between the following settings.
  SMALL* ⇔ LARGE
- **CENTER SPK**
  Pressing the button toggles between the following settings.
  When the FRONT SPK is selected "SMALL":
  SMALL* ⇔ NONE
  When the FRONT SPK is selected "LARGE":
  ⇔ LARGE ⇔ SMALL* ⇔ NONE ⇔
- **REAR SPK**
  Pressing the button toggles between the following settings.
  When the FRONT SPK is selected "SMALL":
  SMALL* ⇔ NONE
  When the FRONT SPK is selected "LARGE":
  ⇔ LARGE ⇔ SMALL* ⇔ NONE ⇔

** Select when the supplied speakers with this system are used.*

To exit power amplifier setting mode
Press SETTING again.

Adjusting delay time

The delay time for the center speaker and rear speakers is calculated by comparing the distance between the rear/center speakers and the listening point with the distance between the front speakers and the listening point.

1 Press SETTING.

2 Press the ▲/▼ cursors until the following item appears on the display window.

- **CENTER DELAY**
  For setting the delay time for the center speaker
- **REAR DELAY**
  For setting the delay time for the rear speakers

- After a while, the current setting appears.

3 Within 5 seconds, press the ◄/► cursors to select the delay time.

- **CENTER DELAY**
  Pressing the button changes the delay time between 0 ms and 5 ms.
  When the distance between the listening point and the center speaker is close to the distance to the front speakers, set the delay time to 0 ms. Increase the delay time when the distance to the center speaker is shorter.
  - A 1ms increase/decrease of delay time is equivalent to a 30 cm change in distance.
- **REAR DELAY**
  Pressing the button changes the delay time between 0 ms and 15 ms.
  When the distance between the listening point and the rear speakers is close to the distance to the front speakers, set the delay time to 0ms. Increase the delay time when the distance to the rear speakers is shorter.
  - A 1ms increase/decrease of delay time is equivalent to a 30 cm change in distance.

To exit power amplifier setting mode
Press SETTING again.

Notes:

- *When the center speaker size is set to "NONE" (not used), you cannot adjust CENTER DELAY.*
- *When the rear speaker size is set to "NONE" (not used), you cannot adjust REAR DELAY.*

Adjusting crossover

When using a small speaker with weak bass as a front, center, or rear speaker, you can redirect bass audio to the sub-woofer. Select a crossover frequency to match the size of the small speaker being used.

- When you use the supplied speakers with this system, set the crossover frequency as follows:
  CROSSOVER: 200Hz

1 Press SETTING.

2 Press the ▲/▼ cursors until "CROSSOVER" appears on the display window.

- After a while, the current setting appears.

3 Within 5 seconds, press the ◄/► cursors to select the crossover frequency.

Pressing the button changes the crossover frequency as follows:
↔ 200Hz ↔ 120Hz ↔ 100Hz ↔

Crossover frequency	Speaker diameter
100Hz	approx. 10 cm (4")
120Hz	approx. 8 cm (3-3/16")
200Hz*	approx. 4 cm (1-5/8")

** Select when the supplied speakers with this system are used.*

To exit power amplifier setting mode
Press SETTING again.

Note:

- *When "LARGE" is set for the front, center and rear speakers, you cannot adjust CROSSOVER.*

Adjusting LFE attenuator

When bass sound is distorted while playing back the program recorded in Dolby Digital or DTS surround, you can lower the sound level through the LFE attenuator.

- Normally, LFE ATT should be set to "OFF".

1 Press SETTING.

2 Press the ▲/▼ cursors until "LFE ATT." appears on the display window.

- After a while, the current setting appears.

3 Within 5 seconds, press the ◄/► cursors to select "ON" or "OFF".

Pressing the button toggles between "ON" and "OFF".

ON: Select when bass sound is distorted.
OFF: Select to turn off LFE ATT. effect.

To exit power amplifier setting mode
Press SETTING again.

Adjusting dynamic range

You can compress the dynamic range. This may be used when you play back surround effects at night. This function work only for the program recorded in Dolby Digital.

- The initial setting of D. RANGE COMP is "MID".

1 Press SETTING.

2 Press the ▲/▼ cursors until "D. RANGE COMP" appears on the display window.

- After a while, the current setting appears.

3 Within 5 seconds, press the ◄/► cursors to select the setting.

Pressing the button changes the dynamic range compression as follows:
↔ MAX ↔ MID ↔ OFF ↔

MAX: The dynamic range is fully compressed.
MID: The dynamic range is compressed a little. (Initial setting)
OFF: The dynamic range is not compressed.

To exit power amplifier setting mode
Press SETTING again.

Note:

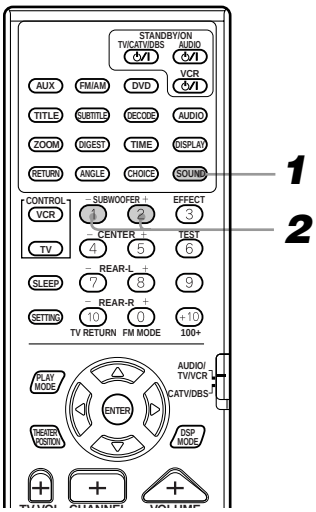
- *To enjoy original sound, you should set to "MID" or "OFF".*

Sound settings

You can adjust the sub-woofer output level, output level of each speaker using a test tone, and DSP effect, to obtain preferable sound for you.
Note that you need to adjust them at the position you will listen to.

Adjusting sub-woofer level

You can adjust the sub-woofer output level to increase or decrease the sound volume from the sub-woofer.



1 Press SOUND.

The system enters sound setting mode.

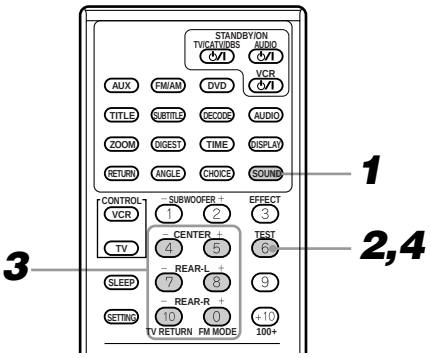
2 Press SUBWOOFER +/– to adjust the level.

You can adjust the sub-woofer output level between +10 dB and –10 dB. (0 dB: Rated level)

- After 5 seconds, the display returns to the one before entering the sound setting mode.

Adjusting speaker level

While playing a noise-like test tone, you can adjust the output level of each speaker by increasing or decreasing the sound volume from the speaker.



1 Press SOUND.

The system enters sound setting mode.

2 Press TEST to play a test tone.

"TEST TONE L" appears on the display window and the test tone is played from the speakers in the following order.
↔ TEST TONE L ↔ TEST TONE C ↔ TEST TONE R ↔ TEST TONE RS ↔ TEST TONE LS ↔

- The speaker which is set to "OFF" (not used) in "Setting speaker size" will be skipped. See page 49.

3 While listening, adjust each speaker level.

You can adjust each speaker output level between +10 dB and –10 dB. (0 dB: Rated level)
When you press the following button, the current setting value appears on the display window.

- **TEST TONE L (Left front speaker)**
  Just listen for your reference.
- **TEST TONE C (Center speaker)**
  Press CENTER +/– to adjust the level.
- **TEST TONE R (Right front speaker)**
  Just listen for your reference.
- **TEST TONE RS (Right rear speaker)**
  Press REAR R +/– to adjust the level.
- **TEST TONE LS (Left rear speaker)**
  Press REAR L +/– to adjust the level.

4 Press TEST to stop the test tone.

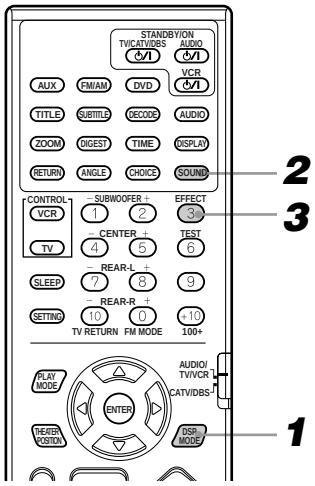
- After 5 seconds, the display returns to the one before entering the sound setting mode.

Note:

• You can adjust the speaker level without playing a test tone. In this case, perform only steps 1 and 3.

Adjusting DSP effect

You can adjust the strength of DSP (Digital Signal Processor) effect for each DAP mode so that you can customize sound effect. About the DAP, see "Using the DSP Modes [DSP MODE]" on page 20.



1 Press DSP MODE to select one of DSP modes.

The current DSP mode appears on the display window. Each time you press the button, DSP mode changes as follows.
→SURROUND ON*→ THEATER → LIVE CLUB → DANCE CLUB → HALL → PAVILION → DSP OFF → (back to the beginning)

** "PRO LOGIC" appears when the current source is not DVD.*

2 Press SOUND.

The system enters sound setting mode.

3 Press EFFECT to select the desired effect level.

The current effect level appears on the display window. Each time you press the button, the effect level changes as follows.
⟷ DSP EFFECT 1 ⟷ DSP EFFECT 2 ⟷ DSP EFFECT 3 ⟷ DSP EFFECT 4 ⟷ DSP EFFECT 5 ⟷

- The greater number, the greater effect.

4 Repeat steps 1-3 for other DSP mode.

- After 5 seconds, the display returns to the one before entering the sound setting mode.

Note:

- *If DAP mode is not selected, you cannot adjust the DSP effect.*

AV COMPU LINK remote control system

The AV COMPU LINK remote control system allows you to operate JVC video components (TV and VCR) through the center unit.

AV COMPU LINK

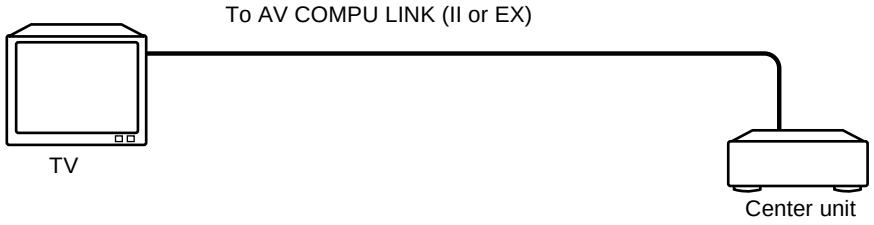
To use this remote control system, you need to connect the video components you want to operate, follow the diagrams and procedure explained here.

Connection and setup

When connecting to a TV

Connect the center unit to a TV via the AV COMPU LINK terminals.
Then, set the AV COMPULINK setting of the center unit as follows.

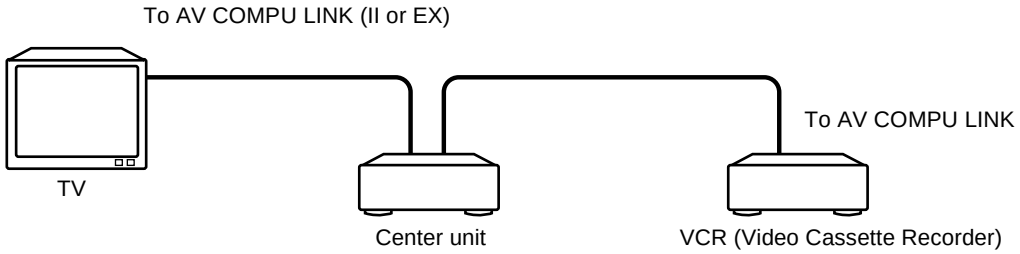
- When connecting to VIDEO-1 input terminal of the TV: DVD2 (Initial setting)
- When connecting to VIDEO-2 input terminal of the TV: DVD3



When connecting to a TV and VCR

Connect the center unit to a TV and VCR via AV COMPU LINK terminals.
Then, set the AV COMPULINK setting of the center unit and the VCR's Remote Control Code setting as follows:

- **When connecting to VIDEO-1 input terminal of the TV:**
  Center unit's AV COMPULINK setting (Initial setting):**DVD2**
  VCR's Remote Control Code: **B**
- **When connecting to VIDEO-2 input terminal of the TV:**
  Center unit's AV COMPULINK setting:**DVD3**
  VCR's Remote Control Code: **A**



- The AV COMPULINK setting is operated in the on-screen SYSTEM menu. See page 45 for operation.

IMPORTANT!

When you connect the component video output to your TV:

- **Set the AV COMPULINK setting on the center unit to "DVD1".**

Note:

- *There may be no description about connections to a DVD player in the instruction manual of a TV or VCR. However a TV or VCR with AV COMPU LINK terminals indicating "II" or "EX" can be connected to the center unit.*

Operation

You can enjoy pictures and/or sound by just putting a source component (which plays back the pictures and/or sound such as the center unit or a VCR) into play mode. You do not have to operate the TV including not having to perform power switching.

1 Turn on the main power of the TV.

2 Insert a disc into the source component.

3 Press PLAY of the source component.

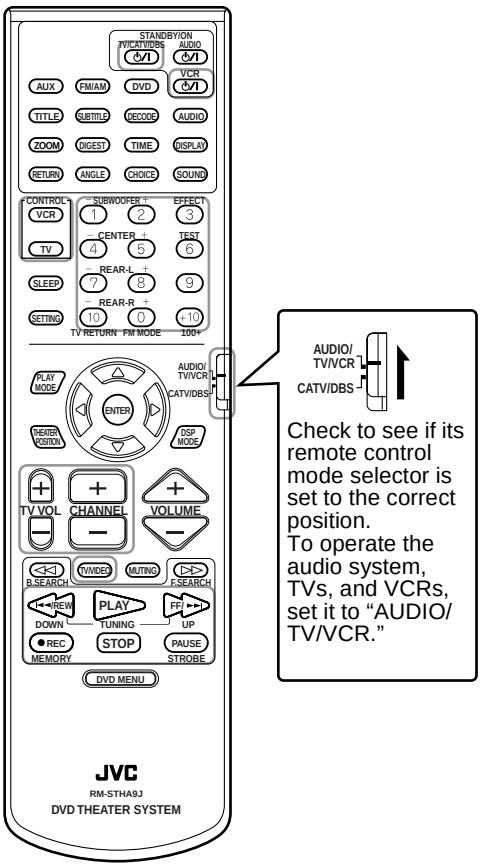
The following actions are performed automatically:

- Turning on the power for the TV.
- Setting the source of the TV to the external input (VIDEO-1 or VIDEO-2).

Operating Other Manufacturers' Video Equipment

This remote control supplied with the receiver can transmit control signals for other manufacturers' VCRs, TVs, CATV converters and DBS tuners. By changing the transmittable signals from preset ones to the other manufacturers', you can operate the other manufacturer's components using this remote control.

When operating the other manufacturers' components, refer also to the manuals supplied with them. To operate these components with the remote control, first you need to set the manufacturer's code each for VCR, TV, CATV converters, and DBS tuner.


AUDIO/
TV/VCR
CATV/DBS
Check to see if its remote control mode selector is set to the correct position.
To operate the audio system, TVs, and VCRs, set it to "AUDIO/ TV/VCR."
JVC
RM-STHA9J
DVD THEATER SYSTEM

To change the transmittable signals for operating another manufacturer's TV

1 Slide the remote control mode to "AUDIO/TV/VCR."

2 Press and hold TV/CATV/DBS ⏻/I.

Keep press until step 4 is finished.

3 Press TV.

4 Enter manufacturer's code (2 digits) using buttons 1 - 9, and 0.

See the list below to find the code.
Examples: For a JVC product, press 0, then 1.
For a Hitachi product, press 1, then 0.

5 Release TV/CATV/DBS ⏻/I.

The following buttons can be used for operating the TV (with the remote control mode selector set to "AUDIO/TV/VCR"):

TV/CATV/DBS ⏻/I: Turns on and off the TV.
TV VOL +/–: Adjusts the volume.
TV/VIDEO: Sets the input mode (either TV or VIDEO).

After pressing TV (with the remote control mode selector set to "AUDIO/TV/VCR"), you can perform the following operations on a TV:

CHANNEL +/– : Changes the channels.
1 - 10, 0, 100+ (+10): Selects the channels. 100+ (+10) button will function as the ENTER button if your TV requires pressing ENTER after selecting a channel number.

Note:

- *Refer to the manual supplied with your TV.*

6 Try to operate your TV by pressing TV/CATV/DBS ⏻/I.

When your TV turns on or off, you have entered the correct code.
If there are more than one code listed for your brand of TV, try each one until the correct one is entered.

Manufacturer	Code	Manufacturer	Code
JVC	01	SAMSUNG	12
HITACHI	10	SANYO	13
MAGNAVOX	02	SHARP	06
MITSUBISHI	03	SONY	07
PANASONIC	04, 11	TOSHIBA	08
RCA	05	ZENITH	09

Manufactures' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

To change the transmittable signals for operating a CATV converter or DBS tuner

1 Slide the remote control mode to "CATV/DBS."

2 Press and hold TV/CATV/DBS ⏻/I.
Keep press until step 4 is finished.

3 Press TV.

4 Enter manufacturer's code (2 digits) using buttons 1 - 9, and 0.
See the list below to find the code.

Examples:
For a JVC product, press 2, then 1.
For a Pioneer product, press 1, then 3.

5 Release TV/CATV/DBS ⏻/I.
After setting the remote control mode selector to "CATV/DBS," you can perform the following operations on the CATV convertor or on the DBS tuner:

TV/CATV/DBS ⏻/I:	Turns on and off the CATV converter or DBS tuner.
CHANNEL +/–:	Changes the channels.
1 - 10, 0, 100+ (+10):	Selects the channel. 100+ (+10) button will function as the ENTER button if your equipment requires pressing ENTER after selecting a channel number.

Note:
- *Refer to the manual supplied with your CATV converter or DBS tuner.*

6 Try to operate your CATV converter or DBS tuner by pressing TV/CATV/DBS ⏻/I.
When your CATV converter or DBS tuner turns on or off, you have entered the correct code.
If there are more than one code listed for your brand of CATV converter or DBS tuner, try each one until the correct one is entered.

Manufacturer	Code
ECHOSTAR	21
GI JERROLD	01, 02, 03, 04, 05, 06, 07, 08
HAMLIN/REGAL	15, 16, 17, 18
PIONEER	13, 14
RCA	19
SCIENTIFIC ATLANTA	09, 10
SONY	20
ZENITH	11, 12

Manufactures' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

To change the transmittable signals for operating another manufacturer's VCR

1 Set the remote control mode to "AUDIO/TV/VCR."

2 Press and hold VCR ⏻/I.
Keep press until step 4 is finished.

3 Press VCR.

4 Enter manufacturer's code (2 digits) using buttons 1 - 9, and 0.
See the list below to find the code.

Examples:
For a JVC product, press 0, then 1.
For a Funai product, press 1, then 0.

5 Release VCR ⏻/I.
Following button can be used for operating the VCR (with the remote control mode selector set to "AUDIO/TV/VCR"):

VCR ⏻/I: Turns on and off the VCR.

After pressing VCR (with the remote control mode selector set to "AUDIO/TV/VCR"), you can perform the following operations on the VCR:

PLAY:	Starts playback.
◄◄:	Rewinds a video tape.
►►:	Fast winds a video tape.
STOP:	Stops operation.
PAUSE:	Pauses.
● REC:	Starts recording or enters recording pause.
CHANNEL +/– :	Changes the TV channels on the VCR.
1 - 10, 0, 100+ (+10):	Selects the TV channels. 100+ (+10) button will function as the ENTER button if your VCR requires pressing ENTER after selecting a channel number.

Note:
- *Refer to the manual supplied with your VCR.*

6 Try to operate your VCR by pressing VCR ⏻/I.
When your VCR turns on or off, you have entered the correct code.
If there are more than one code listed for your brand of VCR, try each one until the correct one is entered.

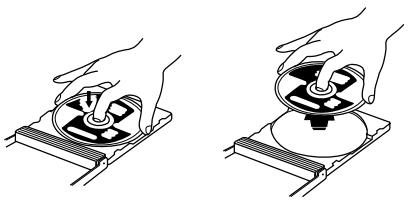
Manufacturer	Code	Manufacturer	Code
JVC	01, 02, 03	PHILIPS	09
EMERSON	11, 26	RCA	05, 06
FISHER	29	SAMSUNG	24
FUNAI	10, 14, 15, 16	SANYO	21, 22, 23
GOLD STAR	12	SHARP	27, 28
HITACHI	04	SHINTOM	30
MITSUBISHI	13	SONY	18, 19, 20
NEC	25	ZENITH	08
PANASONIC	07, 17		

Manufactures' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

Care and handling of discs

How to handle discs

When handling a disc, do not touch the surface of the disc.
Since discs are made of plastic, they are easily damaged.
If a disc gets dirty, dusty, scratched or warped, the image sand sound will not be picked up correctly, and such a disc may cause the player to malfunction.



Label side

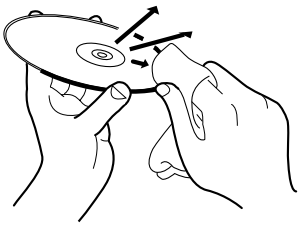
Do not damage the label side, stick paper to or use any adhesive on its surface.

Storage

Make sure that discs are kept in their cases. If discs are piled on top of one another without their protective cases, they can be damaged. Do not put discs in a location where they may be exposed to direct sunlight, or in a place where the humidity or temperature is high. Avoid leaving discs in your car!

Maintenance of discs

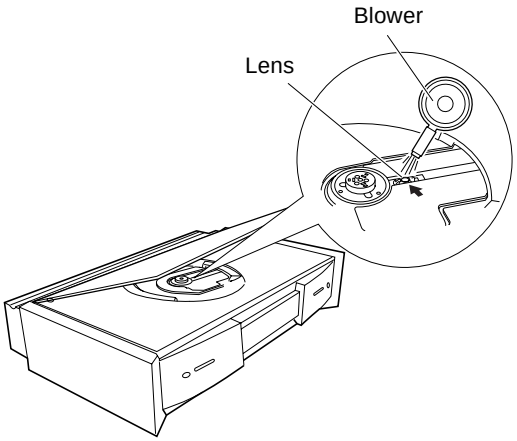
If there are fingerprints or other dirt adhering to a disc, wipe with a soft dry cloth, moving from the center outwards.
If a disc is difficult to clean, wipe with a cloth moistened with water.
Never use record cleaners, petrol, alcohol or any anti-static agents.



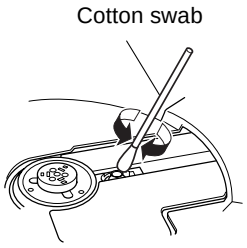
Cleaning the lens

If the lens in the laser pickup is dirty, video image irregularities, sound dropout, etc., could occur.
Open the disc cover and clean the lens as shown below:

- Use a blower (available from a camera store) to blow dust off the lens.



- If there are fingerprints, etc. on the lens, gently wipe clean with a cotton swab.



CAUTIONS:

- **Do not use irregular shape discs (heat-shape, octagonal, etc.). Using these discs can damage the center unit.**
- **Sometimes during playback, noise or images may be garbled. This is sometimes due to the disc. (It may not be up to industry standards.)**
  These symptoms are caused by the discs, not by the malfunction of the center unit.

Troubleshooting

Use this chart to help you solve daily operational problems. If there is any problem you cannot solve, contact your JVC service center.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Power does not come on.	The power cord.	Insert the plug into the socket.
Power is not supplied to the powered sub-woofer	The power cord has been pulled out of the AC outlet. The system cable is not connected.	Press the ⏻/I on the center unit to switch power OFF, and then press it again to switch power ON.
The remote control does not work.	It is too far from the center unit, or is not facing the center unit. There is something obstructing the remote sensor.	Avoid any obstacles within approximately 5 m of the detector on the remote control.
	The battery is flat.	Replace the battery.
	The battery has been inserted the wrong way round (+/–).	Insert the battery correctly.
	Sunlight is falling directly on the detector.	Shade the remote control from direct sunlight.
	The entered manufacturer's code number is incorrect.	Enter the correct code number.
The remote control does not work as expected.	The remote control mode selector position is incorrect.	Set it to the correct position. Normally, it should be set to "AUDIO/TV/VCR".
No sound.	The system cable is not connected.	Check the connection.
	The speaker cord is not connected.	Check the connection.
	There is a short in the speaker cord.	Reconnect the speaker cord and press on the center unit to restart the system.
	The powered sub-woofer power supply is off.	Insert the plug firmly into the socket and press ⏻/I on the center unit to switch power off, and then press it again to switch power on.
	The audio cord is not connected properly.	Connect the cord properly.
	An incorrect source has been selected.	Select the correct source.
	Muting is on.	Press MUTING to cancel mute.
Sound is emitted from only one speaker.	The speaker cord is not connected correctly.	Connect the cord properly.
	Left-right balance is incorrect.	Adjust balance.
No video.	The video cord is not connected properly.	Connect the cord properly.
	TV input selection is incorrect.	Select the correct input.
Cannot play a disc.	A non-NTSC disc has been inserted. The unit and disc region numbers (local numbers) are incompatible.	Replace the disc.
Video and audio are distorted.	The disc is dirty.	Clean the disc.
	A video deck is connected between the center unit and the TV.	Connect the center unit and TV directly.
The edge is missing on the video image.	Initial setup (monitor type) was incorrect.	Run through initial setup again correctly.
	The TV has been set up incorrectly.	Set up the TV correctly.
Continuous static during FM broadcasts.	The received signal is too weak.	Connect an external FM antenna, or contact your dealer.
	The station is too far away.	Select another station.
	The antenna is not connected correctly.	Check the connection.
Unit does not work correctly.	Lightning or electronic noise interferes with operation of the microcomputer.	Switch power off, and remove and re-insert the power plug in the socket.
	Immediately after beginning to heat the room, the unit was moved to a cold location causing condensation to form inside.	Switch power off and leave the unit a few hours before switching power on again.

Note:

- *Problem may be caused by the components connected to the system. So, please read the manuals for the components carefully.*

Specifications

Center unit (XV-THA9)

Audio section

Total Harmonic Distortion	0.02 %
AUX Iuput Level	290 mV/47 kΩ

Video section

Horizontal Resolution	500 lines
Signal-to-Noise Ratio	68 dB
Output Level	S-video-Y: 1.0 Vp-p/75 Ω S-video-C: 0.286 Vp-p/75 Ω Composite: 1.0 Vp-p/75 Ω Component-Y: 1.0 Vp-p/75 Ω Component-P_B/P_R: 0.7 Vp-p/75 Ω

Tuner section

Tuning Range	FM: 87.5 MHz to 108.0 MHz AM: 530 kHz to 1 710 kHz
Usable Sensitivity	FM: 12.8 dbf (1.2 µV/75 Ω) AM loop antenna: 630 µV/m

Dimensions (W × H × D)	360 mm × 77 mm × 253 mm (14-3/16 inches × 3-1/16 inches × 9-31/32 inches)
Mass	3.0 kg (6.6 lbs)
Power Requirements	AC 120 V ∿, 60 Hz
Power Consumption	20 W (at operation) 1.3 W (in standby mode)

Powered Sub-woofer (SP-PWA9)

Amplifier section

Output Power	Front/Rear/Center	: 20 W × 5, 4 Ω, 1 kHz, 0.7 % THD
		: 30 W × 5, 4 Ω, 1 kHz, 10 % THD
	Powered sub-woofer	: 100 W, 4 Ω, 100 Hz, 0.7 % THD
		: 140 W, 4 Ω, 100 Hz, 10 % THD

Speaker section

Speaker	20 cm (7.9 inches), bass-reflex
Frequency Range	25 Hz to 200 Hz

Dimensions (W × H × D)	240 mm × 435 mm × 455 mm (9-1/2 inches × 17-3/16 inches × 17-15/16 inches)
Mass	16.5 kg (36.4 lbs)
Power Requirements	AC 120 V ∿, 60 Hz
Power Consumption	125 W (at operation) 0 W (in standby mode)

Satellite Speakers (SP-XSA9)

Speakers	7 cm × 4 cm (2-15/16 inches × 1-5/8 inches) bass-reflex, Magnetically Shielded
Power Handling Capacity	30 W
Frequency Range	95 Hz to 20 kHz
Dimensions (W × H × D)	65 mm × 122 mm × 117 mm (2-9/16 inches × 4-13/16 inches × 4-5/8 inches)
Mass	360 g (0.79 lbs)

Center Speaker (SP-XCA9)

Speakers	7 cm × 4 cm (2-3/4 inches × 1-5/8 inches) bass-reflex, Magnetically Shielded
Power Handling Capacity	30 W
Frequency Range	95 Hz to 20 kHz
Dimensions (W × H × D)	122 mm × 65 mm × 115 mm (4-13/16 inches × 2-9/16 inches × 4-9/16 inches)
Mass	360 g (0.79 lbs)

Designs & specifications are subject to change without notice.

Appendix A: Table of languages and their abbreviations

When you select the subtitle language or sound, the languages shown below are displayed as abbreviations.
To select the desired language, select the abbreviation corresponding the language you want to.

AA	Afar
AB	Abkhazian
AF	Afrikaans
AM	Ameharic
AR	Arabic
AS	Assamese
AY	Aymara
AZ	Azerbaijani
BA	Bashkir
BE	Byelorussian
BG	Bulgarian
BH	Bihari
BI	Bislama
BN	Bengali, Bangla
BO	Tibetan
BR	Breton
CA	Catalan
CO	Corsican
CS	Czech
CY	Welsh
DA	Danish
DZ	Bhutani
EL	Greek
EO	Esperanto
ET	Estonian
EU	Basque
FA	Persian
FI	Finnish
FJ	Fiji
FO	Faroese
FY	Frisian
GA	Irish
GD	Scots Gaelic
GL	Galician
GN	Guarani
GU	Gujarati
HA	Hausa
HI	Hindi
HR	Croatian
HU	Hungarian
HY	Armenian
IA	Interlingua
IE	Interlingue

IK	Inupiak
IN	Indonesian
IS	Icelandic
IW	Hebrew
JI	Yiddish
JW	Javanese
KA	Georgian
KK	Kazakh
KL	Greenlandic
KM	Cambodian
KN	Kannada
KO	Korean (KOR)
KS	Kashmiri
KU	Kurdish
KY	Kirghiz
LA	Latin
LN	Lingala
LO	Laothian
LT	Lithuanian
LV	Latvian, Lettish
MG	Malagasy
MI	Maori
MK	Macedonian
ML	Malayalam
MN	Mongolian
MO	Moldavian
MR	Marathi
MS	Malay (MAY)
MT	Maltese
MY	Burmese
NA	Nauru
NE	Nepali
NL	Dutch
NO	Norwegian
OC	Occitan
OM	(Afan) Oromo
OR	Oriya
PA	Panjabi
PL	Polish
PS	Pashto, Pushto
PT	Portuguese
QU	Quechua
RM	Rhaeto-Romance

RN	Kirundi
RO	Rumanian
RU	Russian
RW	Kinyarwanda
SA	Sanskrit
SD	Sindhi
SG	Sangho
SH	Serbo-Croatian
SI	Singhalese
SK	Slovak
SL	Slovenian
SM	Samoan
SN	Shona
SO	Somali
SQ	Albanian
SR	Serbian
SS	Siswati
ST	Sesotho
SU	Sundanese
SV	Swedish
SW	Swahili
TA	Tamil
TE	Telugu
TG	Tajik
TH	Thai
TI	Tigrinya
TK	Turkmen
TL	Tagalog
TN	Setswana
TO	Tonga
TR	Turkish
TS	Tsonga
TT	Tatar
TW	Twi
UK	Ukrainian
UR	Urdu
UZ	Uzbek
VI	Vietnamese
VO	Volapuk
WO	Wolof
XH	Xhosa
YO	Yoruba
ZU	Zulu

Appendix B: Country code list for parental lock

This list is used for the parental Lock operation. For details, see page 46.

AD	Andorra
AE	United Arab Emirates
AF	Afghanistan
AG	Antigua and Barbuda
AI	Anguilla
AL	Albania
AM	Armenia
AN	Netherlands Antilles
AO	Angola
AQ	Antarctica
AR	Argentina
AS	American Samoa
AT	Austria
AU	Australia
AW	Aruba
AZ	Azerbaijan
BA	Bosnia and Herzegovina
BB	Barbados
BD	Bangladesh
BE	Belgium
BF	Burkina Faso
BG	Bulgaria
BH	Bahrain
BI	Burundi
BJ	Benin
BM	Bermuda
BN	Brunei Darussalam
BO	Bolivia
BR	Brazil
BS	Bahamas
BT	Bhutan
BV	Bouvet Island
BW	Botswana
BY	Belarus
BZ	Belize
CA	Canada
CC	Cocos (Keeling) Islands
CF	Central African Republic
CG	Congo
CH	Switzerland
CI	Côte d'Ivoire
CK	Cook Islands
CL	Chile

CM	Cameroon
CN	China
CO	Colombia
CR	Costa Rica
CU	Cuba
CV	Cape Verde
CX	Christmas Island
CY	Cyprus
CZ	Czech Republic
DE	Germany
DJ	Djibouti
DK	Denmark
DM	Dominica
DO	Dominican Republic
DZ	Algeria
EC	Ecuador
EE	Estonia
EG	Egypt
EH	Western Sahara
ER	Eritrea
ES	Spain
ET	Ethiopia
FI	Finland
FJ	Fiji
FK	Falkland Islands (Malvinas)
FM	Micronesia (Fedelated States of)
FO	Faroe Islands
FR	France
FX	France, Metropolitan
GA	Gabon
GB	United Kingdom
GD	Grenada
GE	Georgia
GF	French Guiana
GH	Ghana
GI	Gibraltar
GL	Greenland
GM	Gambia
GN	Guinea
GP	Guadeloupe
GQ	Equatorial Guinea

GR	Greece
GS	South Georgia and the South Sandwich Islands
GT	Guatemala
GU	Guam
GW	Guinea-Bissau
GY	Guyana
HK	Hong Kong
HM	Heard Island and McDonald Islands
HN	Honduras
HR	Croatia
HT	Haiti
HU	Hungary
ID	Indonesia
IE	Ireland
IL	Israel
IN	India
IO	British Indian Ocean Territory
IQ	Iraq
IR	Iran (Islamic Republic of)
IS	Iceland
IT	Italy
JM	Jamaica
JO	Jordan
JP	Japan
KE	Kenya
KG	Kyrgyzstan
KH	Cambodia
KI	Kiribati
KM	Comoros
KN	Saint Kitts and Nevis
KP	Korea, Democratic People's Republic of
KR	Korea, Republic of
KW	Kuwait
KY	Cayman Islands
KZ	Kazakhstan
LA	Lao People's Democratic Republic
LB	Lebanon
LC	Saint Lucia

LI	Liechtenstein
LK	Sri Lanka
LR	Liberia
LS	Lesotho
LT	Lithuania
LU	Luxembourg
LV	Latvia
LY	Libyan Arab Jamahiriya
MA	Morocco
MC	Monaco
MD	Moldova, Republic of
MG	Madagascar
MH	Marshall Islands
ML	Mali
MM	Myanmar
MN	Mongolia
MO	Macau
MP	Northern Mariana Islands
MQ	Martinique
MR	Mauritania
MS	Montserrat
MT	Malta
MU	Mauritius
MV	Maldives
MW	Malawi
MX	Mexico
MY	Malaysia
MZ	Mozambique
NA	Namibia
NC	New Caledonia
NE	Niger
NF	Norfolk Island
NG	Nigeria
NI	Nicaragua
NL	Netherlands
NO	Norway
NP	Nepal
NR	Nauru
NU	Niue
NZ	New Zealand
OM	Oman
PA	Panama

PE	Peru
PF	French Polynesia
PG	Papua New Guinea
PH	Philippines
PK	Pakistan
PL	Poland
PM	Saint Pierre and Miquelon
PN	Pitcairn
PR	Puerto Rico
PT	Portugal
PW	Palau
PY	Paraguay
QA	Qatar
RE	Réunion
RO	Romania
RU	Russian Federation
RW	Rwanda
SA	Saudi Arabia
SB	Solomon Islands
SC	Seychelles
SD	Sudan
SE	Sweden
SG	Singapore
SH	Saint Helena
SI	Slovenia
SJ	Svalbard and Jan Mayen
SK	Slovakia
SL	Sierra Leone
SM	San Marino
SN	Senegal
SO	Somalia
SR	Suriname
ST	Sao Tome and Principe
SV	El Salvador
SY	Syrian Arab Republic
SZ	Swaziland
TC	Turks and Caicos Islands
TD	Chad
TF	French Southern Territories
TG	Togo
TH	Thailand

TJ	Tajikistan
TK	Tokelau
TM	Turkmenistan
TN	Tunisia
TO	Tonga
TP	East Timor
TR	Turkey
TT	Trinidad and Tobago
TV	Tuvalu
TW	Taiwan, Province of China
TZ	Tanzania, United Republic of
UA	Ukraine
UG	Uganda
UM	United States Minor Outlying Islands
US	United States
UY	Uruguay
UZ	Uzbekistan
VA	Vatican City State (Holy See)
VC	Saint Vincent and the Grenadines
VE	Venezuela
VG	Virgin Islands (British)
VI	Virgin Islands (U.S.)
VN	Viet Nam
VU	Vanuatu
WF	Wallis and Futuna Islands
WS	Samoa
YE	Yemen
YT	Mayotte
YU	Yugoslavia
ZA	South Africa
ZM	Zambia
ZR	Zaire
ZW	Zimbabwe

QUALITY JVC SERVICE

HOW TO LOCATE YOUR JVC SERVICE CENTER

TOLL FREE : 1-800-537-5722
http://www.jvcservice.com

Dear customer:
In order to receive the most satisfaction from your purchase, read the instruction booklet before operating the unit. In the event that repair is necessary, or for the address nearest your location, please refer to the factory service center list below or within the Continental United States, Call 1-800-537-5722 for your authorized servicer. Remember to retain you Bill of Sale for Warranty Service.

–JVC

JVC SERVICE & ENGINEERING COMPANY OF AMERICA
DIVISION OF JVC AMERICAS CORP.

FACTORY SERVICE CENTER LOCATIONS

10 New Maple Avenue
Pine Brook, NJ 07058-9641
(973)396-1000

1500 Lakes Parkway
Lawrenceville, GA 30243-5857
(770) 339-2582

705 Enterprise Street
Aurora, IL 60504-8149
(630) 851-7855

5665 Corporate Avenue
Cypress, CA 90630-0024
(714) 229-8011

2969 Mapunapuna Place
Honolulu, HI 96819-2040
(808) 833-5828

10700 Hammerly, Suite 110
Houston, TX 77043
(713) 935-9331

13 Cummings Park
Woburn, MA 01801
(781)376-9100

8192 State Road 84
Davie, FL 33324
(954) 472-1960

890 Dubuque Avenue
South San Francisco, CA 94080-1804
(650) 871-2666

Sophisticated electronic products may require occasional service. Just as quality is a keyword in the engineering and production of the wide array of JVC products, service is the key to maintaining the high level of performance for which JVC is world famous. The JVC service and engineering organization stands behind our products.

NATIONAL HEADQUARTERS
JVC SERVICE & ENGINEERING COMPANY OF AMERICA
DIVISION OF JVC AMRICAS CORP.
1700 Valley Road
Wayne, NJ 07470

If you ship the product • • •

Pack your JVC unit in the original carton or one of equivalent size and strength. Enclose, with the unit, a letter stating the problem or symptom that exists and also a copy of the receipt or bill of sale you received when you purchased your JVC unit. Print your home return address on the outside and the inside of the carton. Send to the appropriate JVC Factory Service Center as listed above.

Don't service it yourself.

CAUTION

To prevent electrical shock, do not open the cabinet. No user serviceable parts inside.
Refer servicing to qualified service personnel.

ACCESSORIES

To purchase accessories for your JVC product, you may contact your local JVC Dealer.
Or from the 48 Continental United States call toll free : 800-882-2345

JVC LIMITED WARRANTY CONSUMER VIDEO 1-90

JVC COMPANY OF AMERICA warrants this product and all parts thereof, except as set forth below ONLY TO THE ORIGINAL PURCHASER AT RETAIL to be FREE FROM DEFECTIVE MATERIAL AND WORKMANSHIP from the date of original retail purchase for the period as shown below. ("The Warranty Period.")

PARTS	LABOR
1 YR	90 DAYS

THIS LIMITED WARRANTY IS VALID ONLY IN THE FIFTY(50) UNITED STATES, THE DISTRICT OF COLUMBIA AND IN COMMONWEALTH OF PUERTO RICO.

WHAT WE WILL DO:

If this product is found to be defective, JVC will repair or replace defective parts at no charge to the original owner. Such repair and replacement services shall be rendered by JVC during normal business hours at JVC authorized service centers. Parts used for replacement are warranted only for the remainder of the Warranty Period. All products and parts thereof may be brought to a JVC authorized service center on a carry-in basis except for Television sets having a screen size 25 inches and above which are covered on an in-home basis.

WHAT YOU MUST DO FOR WARRANTY SERVICE:

Return your product to a JVC authorized service center with a copy of your bill of sale. For your nearest JVC authorized service center, please call toll free: (800)537-5722. If service is not available locally, box the product carefully, preferably in the original carton, and ship, insured, with a copy of your bill of sale plus and letter of explanation of the problem to the nearest JVC Factory Service Center, the name and location of which will be given to you by the toll-free number. If you have any questions concerning your JVC Product, please contact our Customer Relations Department.

WHAT IS NOT COVERED:

This limited warranty provided by JVC does not cover:

1. Products which have been subject to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, or if repaired or serviced by anyone other than a service facility authorized by JVC to render such service, or if affixed to any attachment not provided with the products, or if the model number or serial number has been altered, tampered with, defaced or removed;
2. Initial installation and installation and removal for repair;
3. Operational adjustments covered in the Owner's Manual, normal maintenance, video and audio head cleaning;
4. Damage that occurs in shipment, due to act of God, and cosmetic damage;
5. Signal reception problems and failures due to line power surge;
6. Video Pick-up Tubes/CCD Image Sensor, Cartridge, Stylus(Needle) are covered for 90 days from the date of purchase;
7. Accessories;
8. Batteries (except the Rechargeable Batteries are covered for 90 days from the date of purchase);

There are no express warranties except as listed above.

THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MARCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

JVC SHALL NOT BE LIABLE FOR THE LOSS OF USE THE PRODUCT, INCONVENIENCE, LOSS OR ANY OTHER DAMAGES, WHETHER DIRECT, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, WITHOUT LIMITATION, DAMAGE TO TAPES, RECORDS OR DISCS) RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE WARRANTY PERIOD SET FORTH ABOVE.

Some states do not allow the exclusion of incidental or consequential damages or limitations on how long an implied warranty last, so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

JVC COMPANY OF AMERICA
DIVISION OF JVC AMERICAS CORP.
1700 Valley Road
Wayne, NJ 07470

REFURBISHED PRODUCTS CARRY A SEPARATE WARRANTY, THIS WARRANTY DOES NOT APPLY. FOR DETAILS OF REFURBISHED PRODUCT WARRANTY, PLEASE REFER TO THE REFURBISHED PRODUCT WARRANTY INFORMATION PACKAGED WITH EACH REFURBISHED PRODUCT.

For customer use:

Enter below the Model No. and Serial No. which is located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No.: _____ Serial No.: _____

Purchase date: _____ Name of dealer: _____

JVC

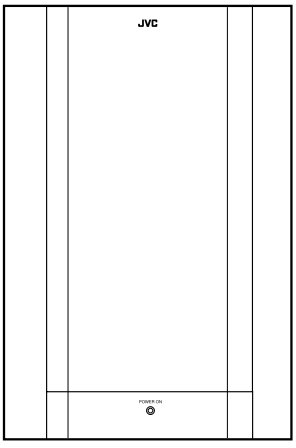
VICTOR COMPANY OF JAPAN, LIMITED

JVC

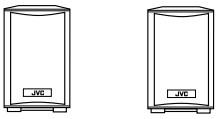
SERVICE MANUAL

DVD DIGITAL CINEMA SYSTEM

TH-A9R

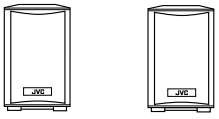


SP-PWA9

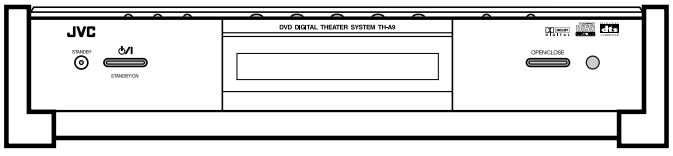


SP-XSA9

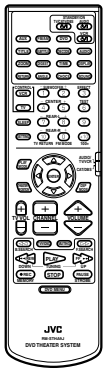
SP-XCA9



SP-XSA9



XV-THA9R



Areas suffix
B ---------- U.K
E ------- Continental Europe
EN -------- Northern Europe

Contents

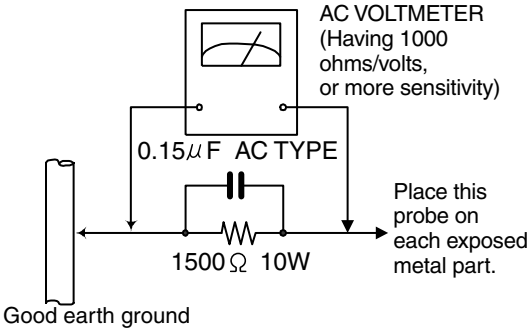
Safety precautions ---------- 1-2
Important for laser products ---------- 1-3
Preventing static electricity ---------- 1-4
Dismantling and assembling
the treverse unit ---------- 1-5
Disassembly method ---------- 1-6
Discription of major IC's ---------- 1-20

COPYRIGHT © 2001 VICTOR COMPANY OF JAPAN, LTD.

No.20944
Apr. 2001

Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer`s warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to eachexposed metal part, particularly any exposed metal part having a return path to the chassis, and meausre the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. voltage measured Any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

⚠ CAUTION

Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (▬), diode (▮) and ICP (●) or identified by the "⚠" mark nearby are critical for safety.
When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer. (Except the JC version)

Important for Laser Products

1.CLASS Ⅱa LASER PRODUCT

2.DANGER : Invisible laser radiation when open and inter lock failed or defeated. Avoid direct exposure to beam.

3.CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.

4.CAUTION : The compact disc player uses invisible laserradiation and is equipped with safety switches whichprevent emission of radiation when the drawer is open and the safety interlocks have failed or are de feated. It is dangerous to defeat the safety switches.

5.CAUTION : If safety switches malfunction, the laser is able to function.

6.CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

⚠ ***CAUTION*** **Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.**

Preventing static electricity

Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

1.1. Grounding to prevent damage by static electricity

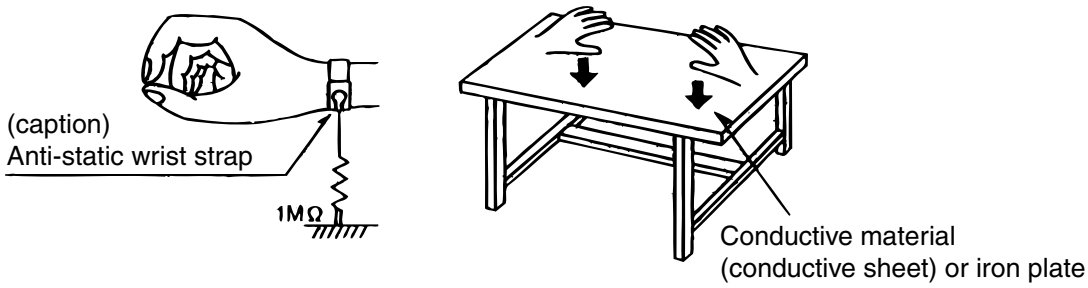
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as DVD players. Be careful to use proper grounding in the area where repairs are being performed.

1.1.1. Ground the workbench

1. Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

1.1.2. Ground yourself

1. Use an anti-static wrist strap to release any static electricity built up in your body.



1.1.3. Handling the optical pickup

1. In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition. (Refer to the text.)

2. Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.

1.2. Handling the traverse unit (optical pickup)

1. Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.

2. Cut off the shorted part of the flexible cable using nippers, etc. after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.

3. Handle the flexible cable carefully as it may break when subjected to strong force.

4. It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it

Dismantling and assembling the traverse unit

1. Notice regarding replacement of optical pickup

Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs to the optical pickup or connected devices.

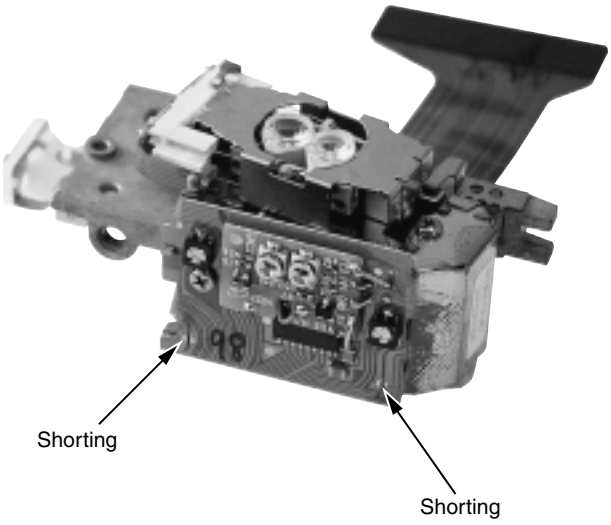
(Refer to the section regarding anti-static measures.)

1. Do not touch the area around the laser diode and actuator.

2. Do not check the laser diode using a tester, as the diode may easily be destroyed.

3. It is recommended that you use a grounded soldering iron when shorting or removing the laser diode.
   Recommended soldering iron: HAKKO ESD-compatible product

4. Solder the land on the optical pickup's flexible cable.
   - Note : Short the land after shorting the terminal on the flexible cable using a clip, etc., when using an ungrounded soldering iron.
   - Note : After shorting the laser diode according to the procedure above, remove the solder according to the text explanation.



Disassembly method

<Main unit>

■Removing the DVD door (See Fig.1)

1. Remove the four screws A that retain the DVD door from the top of the unit.

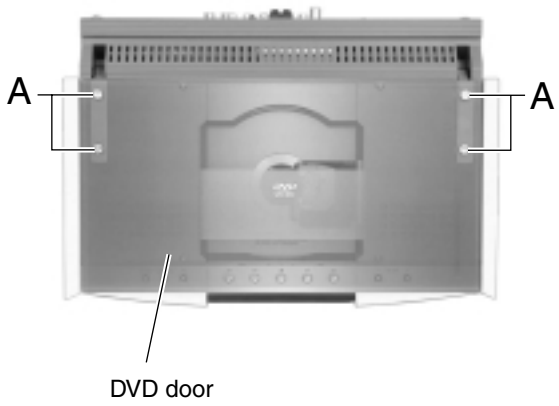


Fig.1

■Removing the right and left side covers (See Fig.2)

・ Prior to performing the following procedure, remove the DVD door.

1. Remove the four screws (B) that attach the left and right side covers of the unit, from the bottom panel.

2. Remove the left and right side covers by moving each of them in the direction of the corresponding arrow.

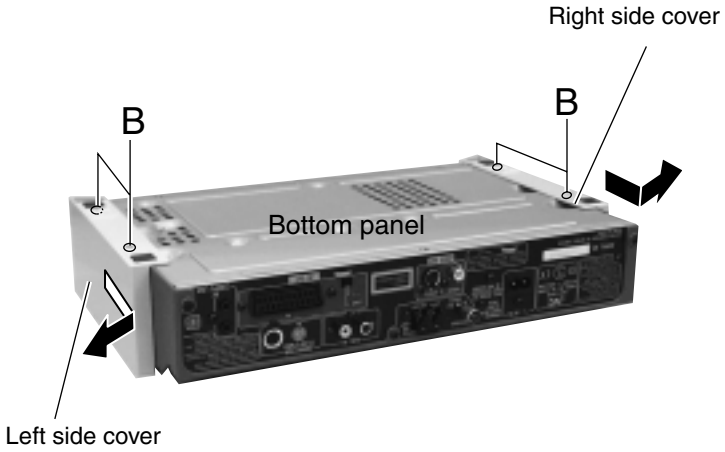


Fig.2

■Removing the front panel assembly and the DVD mechanism base

(See Figs.3 to 7)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.

(Note) Remove the front panel assembly and the DVD mechanism together, just as they were assembled.

- The mechanism slide switch for pickup protection should be set to the SHORTED position.

1. Remove the three screws (C) that retain the front panel assembly, from the bottom panel of the unit.

2. Remove four screws (D) that retain the DVD mechanism base, from the top of the unit.

3. Remove the three screws (E) from the rear panel of the unit that retain the DVD mechanism base.

4. Remove the DVD mechanism together with the front panel assembly by lifting them upward from the main unit and moving them toward the front.

5. Disconnect the card wire of the DVD mechanism from the connector CN101 on the DVD servo board.

   Disconnect the wire of the LED board from the connector CN812 on the analog input/output board.

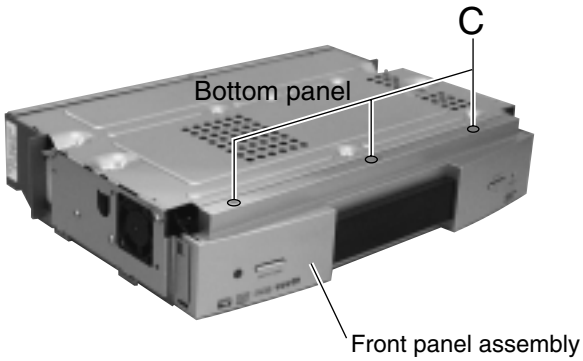


Fig.3

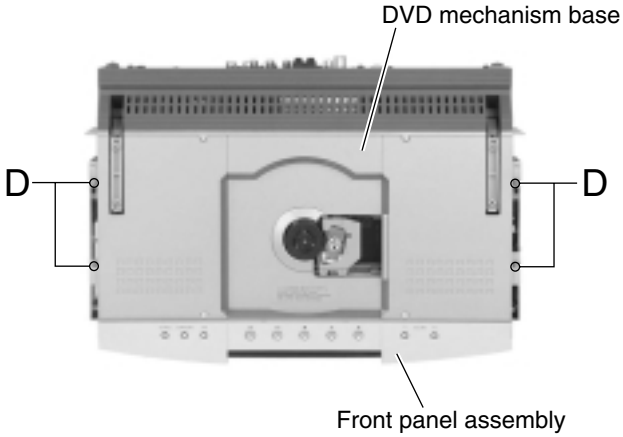


Fig.4

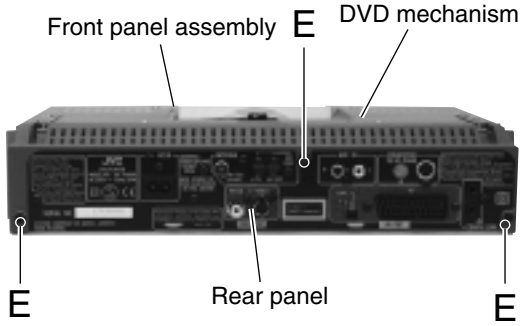


Fig.5

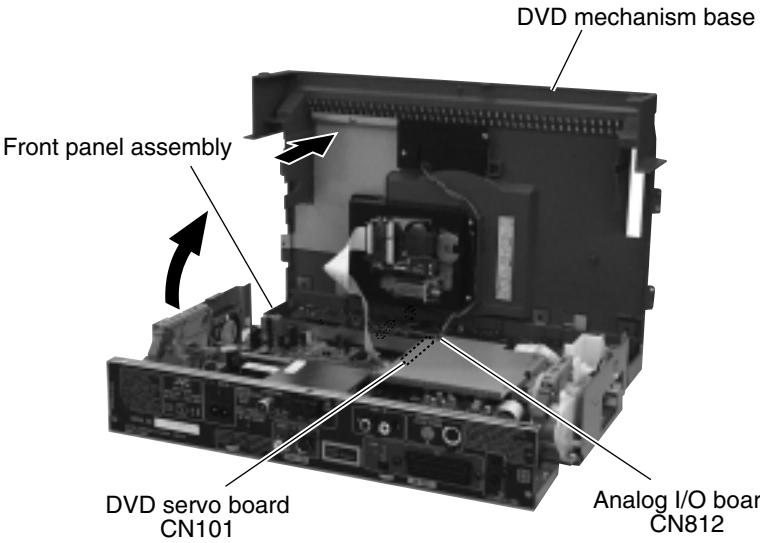


Fig.6

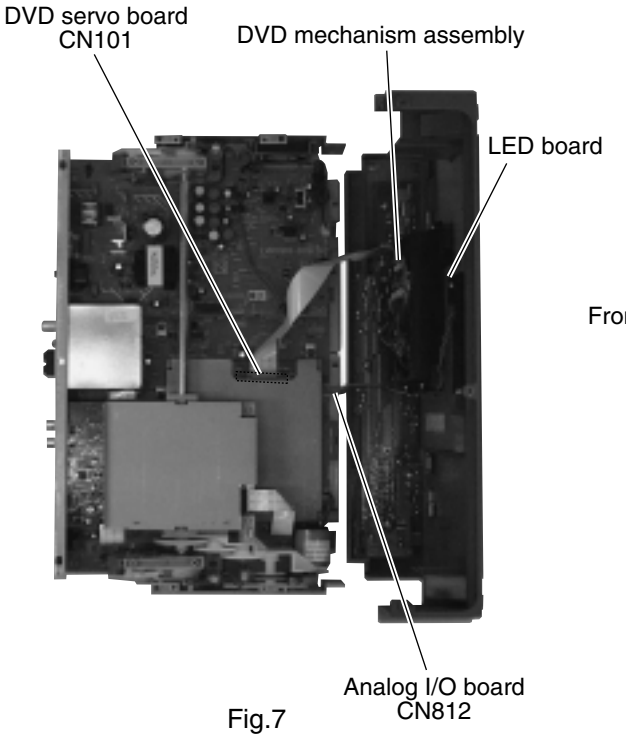


Fig.7

■Separating the front panel assembly and the DVD mechanism base (See Fig.8)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.

1. Remove the front panel assembly and the DVD mechanism base together from the main unit. (See Figs. 3 to 7.)

2. On the back of the DVD mechanism base, disengage the four claws at the engaging points (a) that attach the front panel assembly to the DVD mechanism base, and then pull out the front panel assembly in the direction of the arrow to separate it from the DVD mechanism base.

(Note) It is at this stage that the front panel assembly and the DVD mechanism base are separated from each other.

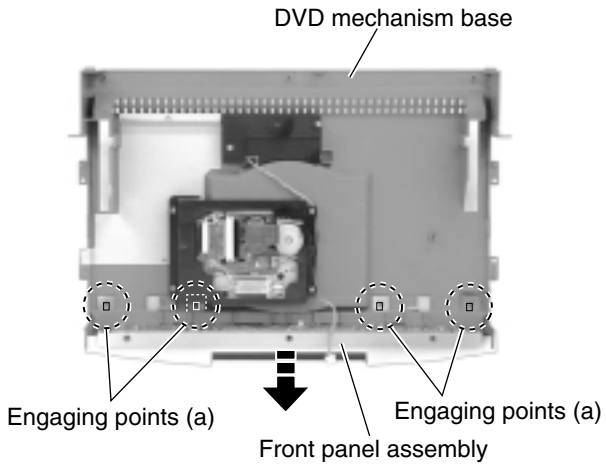


Fig.8

■Removing the display board (See Fig.9)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.
- Also separate the front panel assembly from the DVD mechanism base.

1. Remove the five screws (F) that retain the display board.

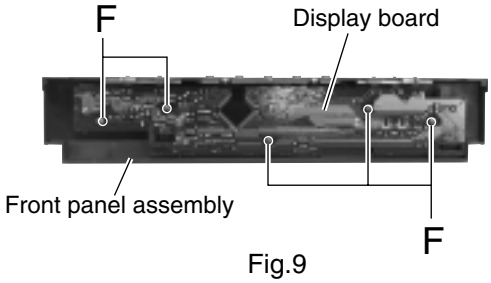


Fig.9

■Removing the DVD mechanism assembly (See Figs.10 and 11)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.

(Note) This work is possible even when the front panel assembly is attached to the DVD mechanism base.

1. Remove the four screws (G) from the back of the DVD mechanism base that retain the DVD mechanism cover.

2. Remove the DVD mechanism assembly from the DVD mechanism base.

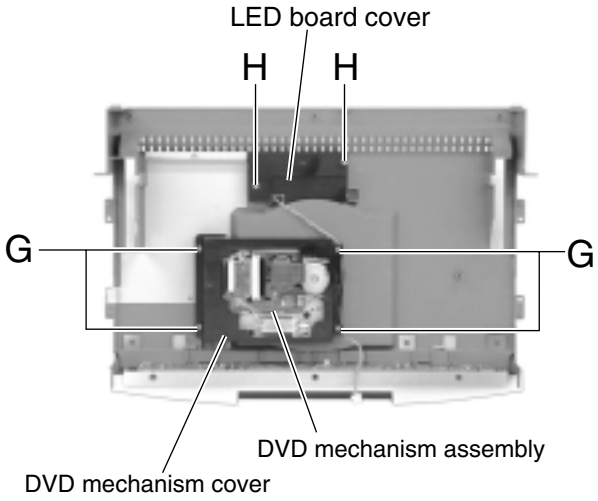


Fig.10

■Removing the LED board (See Figs.10 and 11)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.

(Note) This work is possible even when the front panel assembly is attached to the DVD mechanism base.

1. Remove two screws (H) that retain the LED board cover, from the back of the DVD mechanism base.

2. Remove the LED board by pulling it away from the DVD mechanism base.

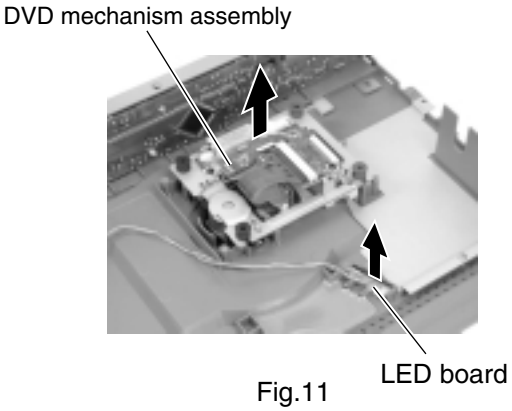


Fig.11

■Removing the analog board (See Figs.12 to 14)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.
- Also remove the front panel assembly and DVD mechanism base.

1. Disconnect the card wires from the connectors CN401 and CN402 on the analog board.

2. Remove the screw (I) that retains the analog board bracket from the top of the unit.

3. Remove the screw (J) and the screw (K) that retain the analog board from the rear panel of the unit.

4. Disengage the analog board bracket and the gear motor assembly by moving the engaged part (b) upward. Then move the analog board in the direction of the arrow, and remove it as if pulling it out of the rear panel.

5. Remove two screws (L) that attach the analog board to the analog board bracket.

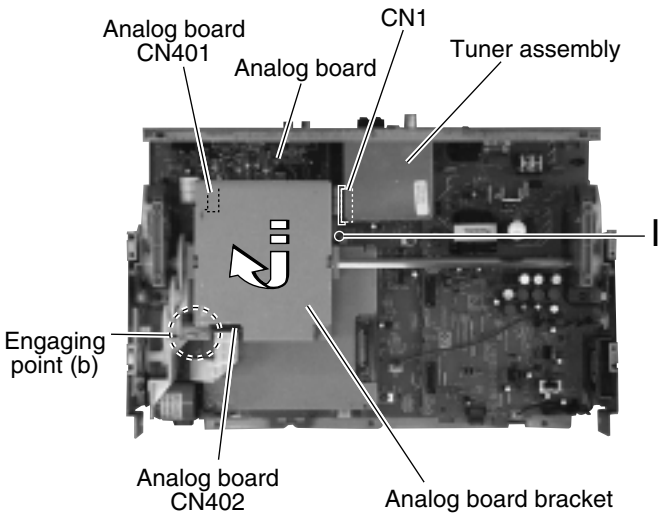


Fig.12

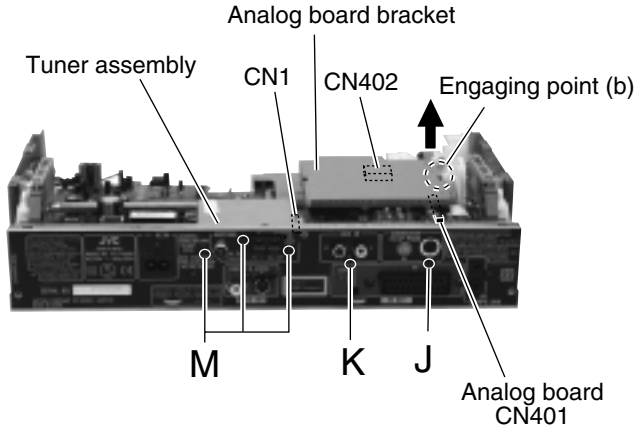


Fig.13

■Removing the tuner assembly (See Figs.12 and 13)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.
- Also remove the front panel assembly and the DVD mechanism base.

1. Remove the three screws (M) that retain the tuner assembly, from the rear panel of the unit.

2. Disconnect the card wire from the connector CN1 on the tuner assembly.

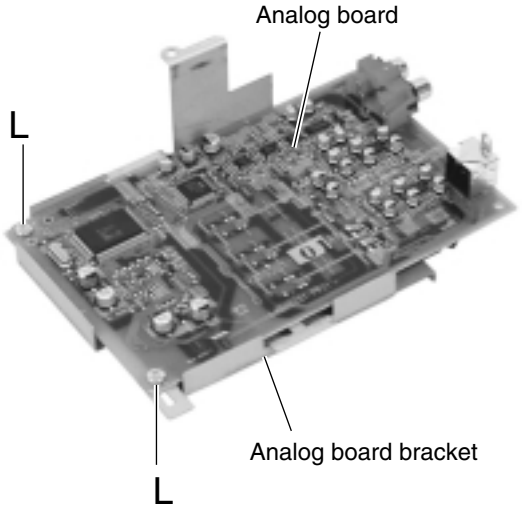


Fig.14

■Removing the fan motor assembly (See Figs.15 and 16)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.
- Also remove the front panel assembly and the DVD mechanism base.

1. Disconnect the wire from the connector CN972 on the power supply board.
2. Remove the two screws (N) that retain the fan motor assembly, from the right side of the unit.
3. Remove the two screws (O) that attach the fan motor assembly to the fan bracket.

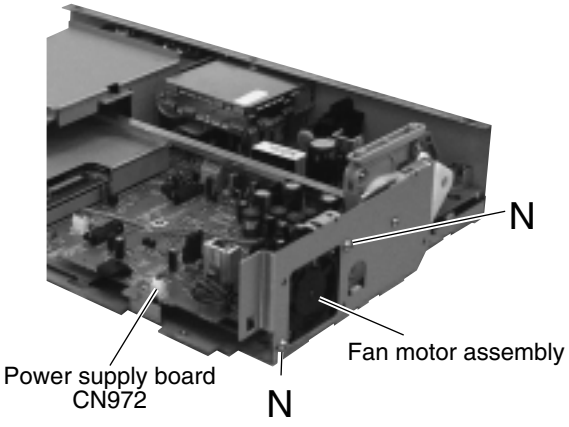


Fig.15

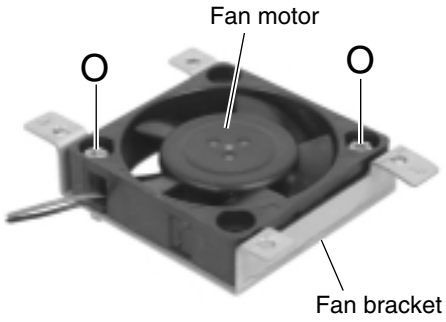


Fig.16

■Removing the gear motor assembly (See Figs.17 to 19)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.
- Also remove the front panel assembly and the DVD mechanism base.
- Also remove the analog board.

1. Disconnect the wire from the connector CN106 on the analog input/output board.
2. Remove the two screws (P) that retain the gear motor assembly and remove the assembly in the direction of the arrow.

(Note) When reassembling, check that the gear motor assembly is engaged properly with the door arm assembly at the engaging points (c) and (d).

3. Remove the belt from the gear motor assembly.
4. Remove two screws Q that retain the gear motor.

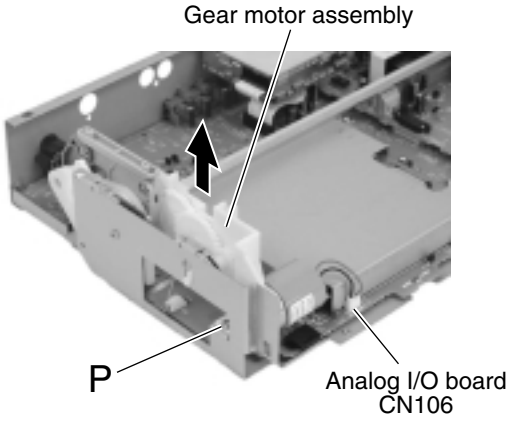


Fig.17

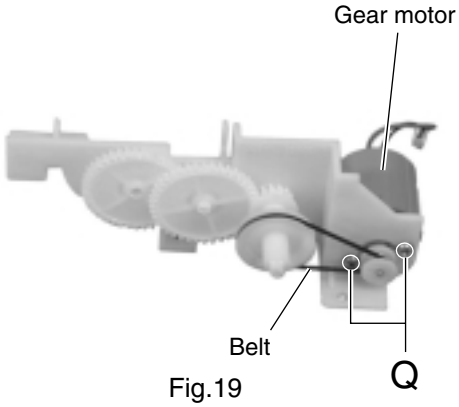


Fig.19

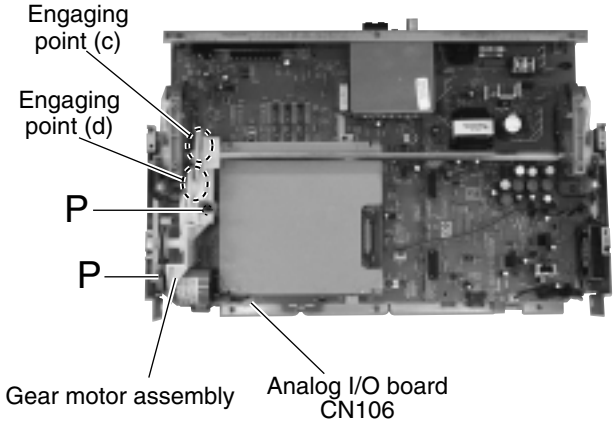


Fig.18

■Removing the door arm assembly (See Figs.20 to 23)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.
- Also remove the front panel assembly and the DVD mechanism base.
- Also remove the analog board.
- Also remove the gear motor assembly.

1. Disconnect the wires from the connectors CN810 and CN811 on the analog input/output board.

2. Remove the four screws (R) that retain the door arm assembly, from the top of the unit.

3. Remove the two screws (S) that retain the door arm assembly, from the left and right sides of the unit.

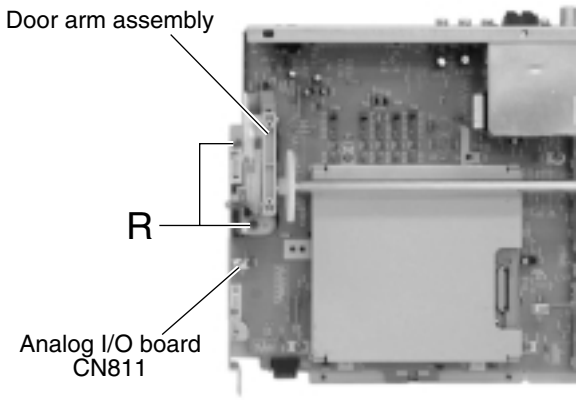


Fig.20

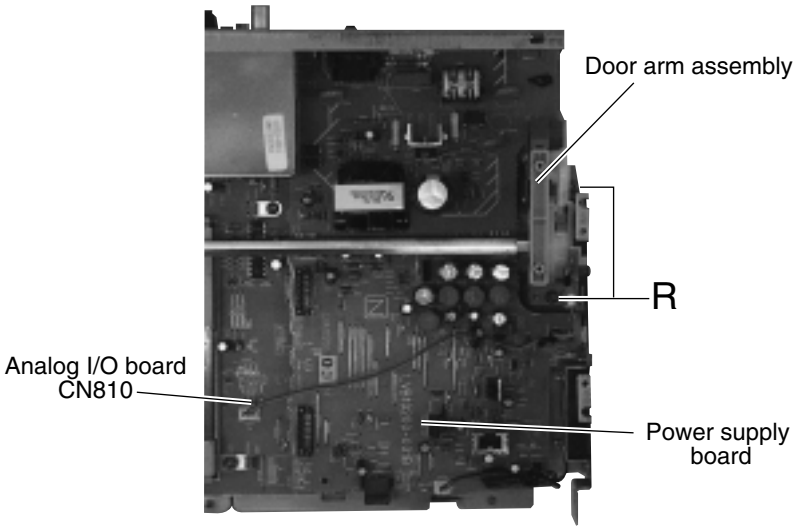


Fig.21

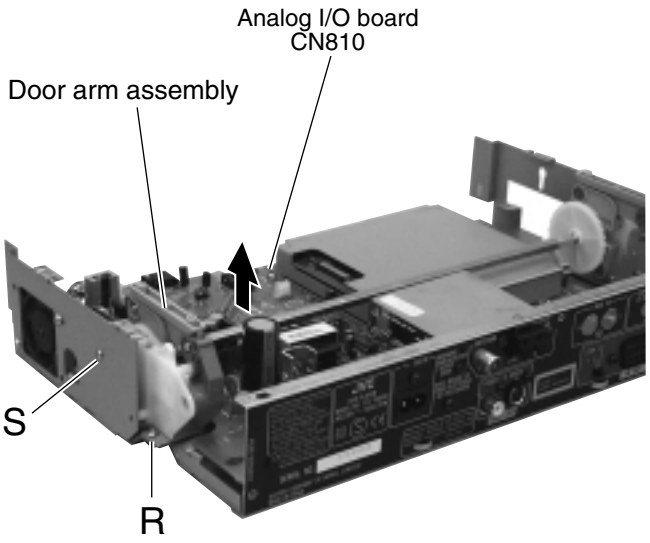


Fig.23

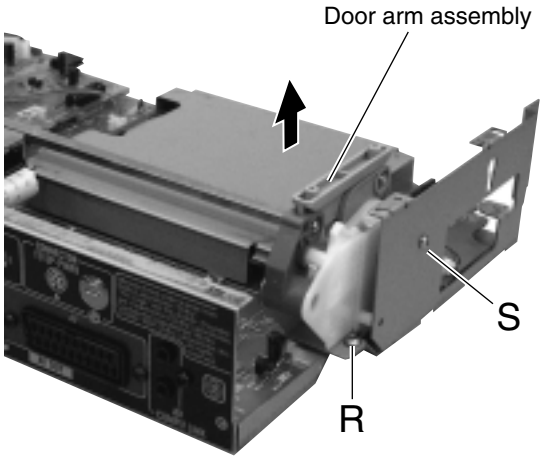


Fig.22

■Removing the door arm boards (L) and (R) (See Figs.24 and 25)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.
- Also remove the front panel assembly and the DVD mechanism base.
- Also remove the analog board.
- Also remove the gear motor assembly.
- Also remove the door arm assembly.

1. Remove the two screws (U) that retain the door arm board (L).

2. Remove two screws (U) that retain the door arm board (R).

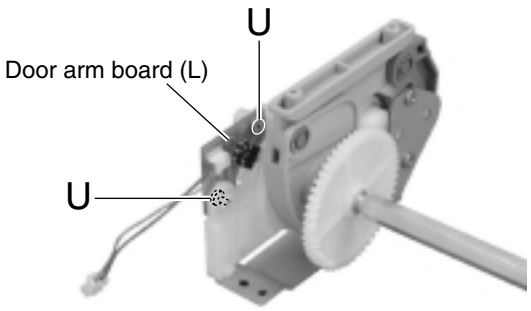


Fig.24

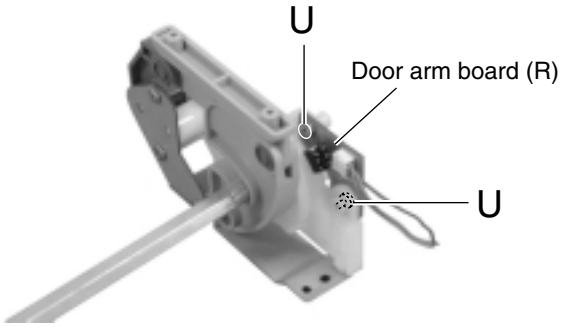


Fig.25

■Removing the power supply board (See Figs.26 and 27)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.
- Also remove the front panel assembly and the DVD mechanism base.
- Also remove the analog board.
- Also remove the gear motor assembly.
  Also remove the door arm assembly.

1. Remove the screw (V) that retains the power supply board, from the top of the unit.

2. Remove three screws (W) that retain the power supply board, from the rear panel of the unit.

3. Pull out the power supply board from clamp a.

4. Disconnect the wire from the connector CN972 on the power supply board, and then remove the power supply board in the direction of the arrow while unplugging the connectors CN951 and CN961 from the analog input/output board.

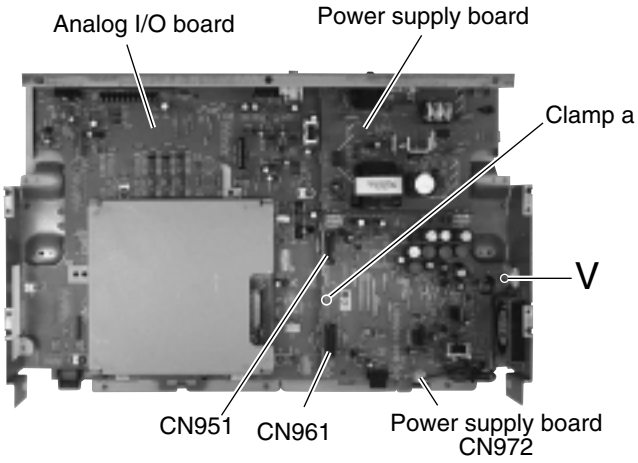


Fig.26

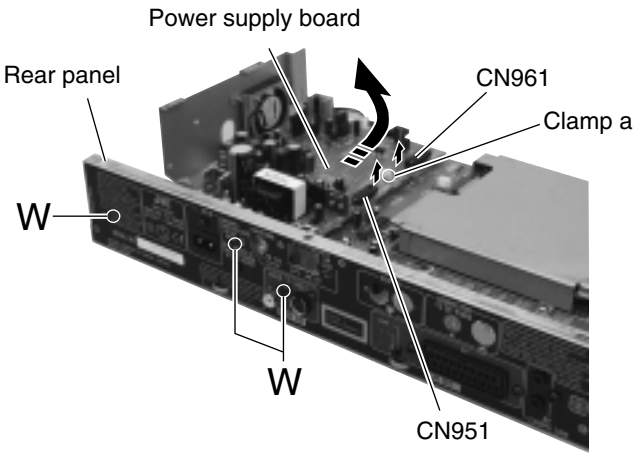


Fig.27

■Removing the AV decoder board and analog input/output board (See Figs.28 to 30)

- Prior to performing the following procedure, remove the left and right side covers.
- Also remove the DVD door.
- Also remove the front panel assembly and DVD mechanism base.
- Also remove the analog board.
- Also remove the gear motor assembly.
- Also remove the door arm assembly.

1. Remove the three screws (X) that retain the AV decoder board cover, from the top of the unit and remove the screw (X) that retains the analog input/output board.

2. IF it is required to separate the AV decoder board from the analog input/output board, unplug the connectors CN501, CN502 and CN503 on the AV decoder board from the analog input/output board.

   (Note) The analog input/output board can be removed even when it is engaged with the AV decoder board.

3. Remove the five screws (Y) that retain the analog input/output board, from the rear panel of the unit. This procedure also detaches the rear panel.

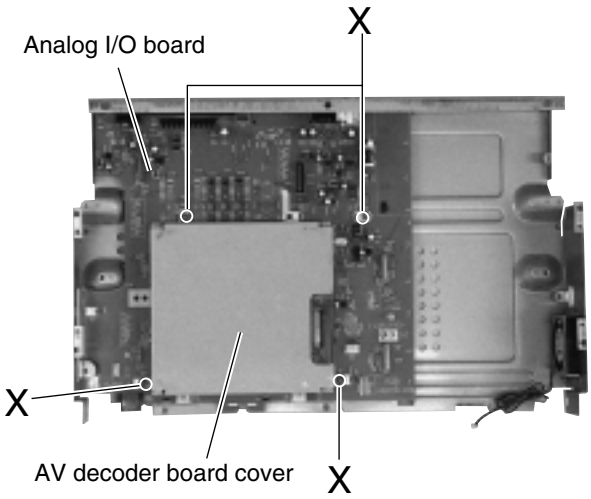


Fig.28

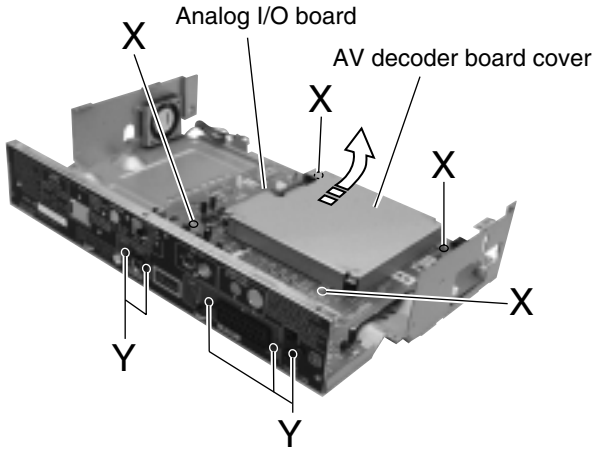


Fig.29

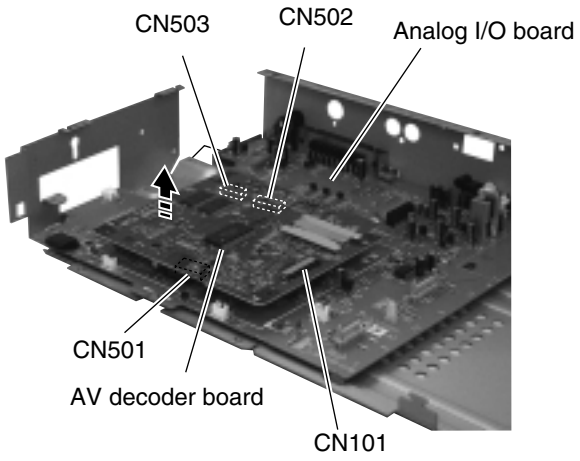


Fig.30

Disassembly method

<Speaker>

■Removing the heat sink cover (See Fig.1)

1. Remove the four screws A attaching the heat sink cover.

■Removing the amplifier assembly and the amplifier cover (See Figs.2 and 3)

・ Prior to performing the following procedure, remove the heat sink.

1. Remove the eigth screws B attaching the amplifier assembly on the back of the body.
2. Move the amplifier assembly backward and disconnect the harness from connector CN109 in the lower part of the amplifier assembly.
3. Pull out the volume knob.
4. Remove the ten screws C attaching the amplifier cover.
5. Remove the ten screws D and the one screw E attaching the amplifier cover.

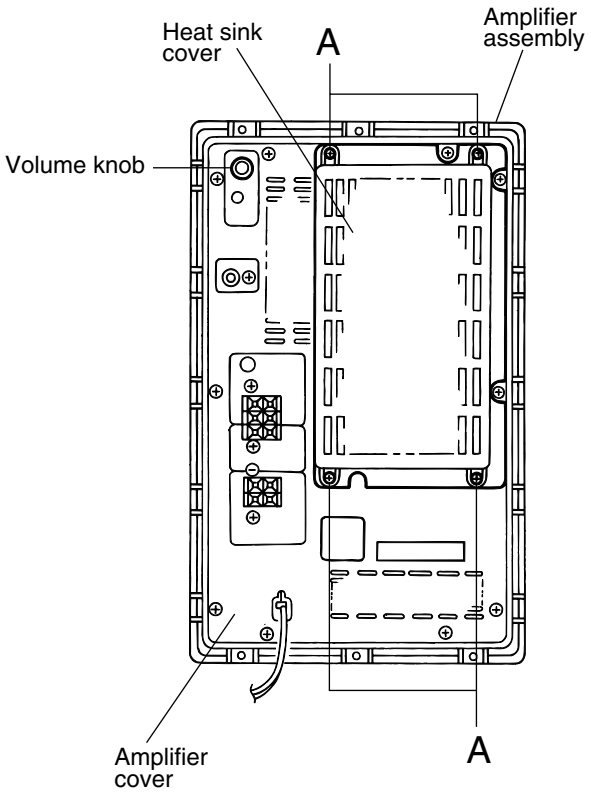


Fig.1

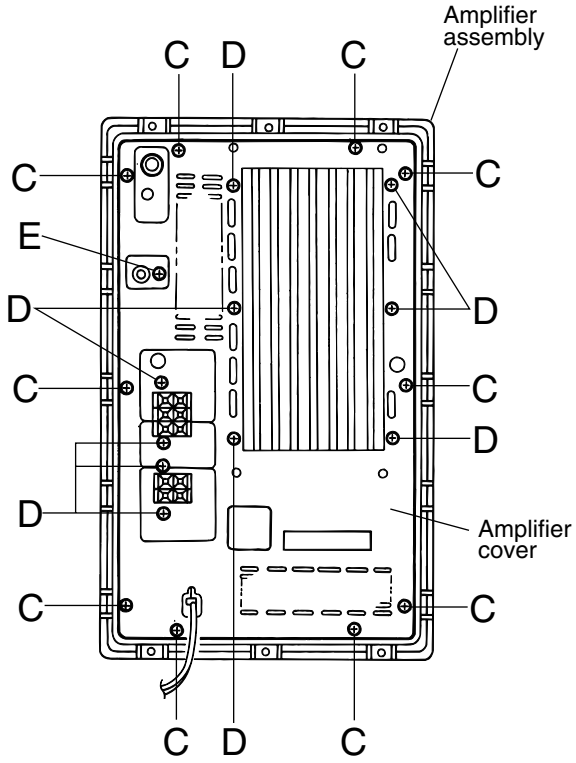


Fig.3

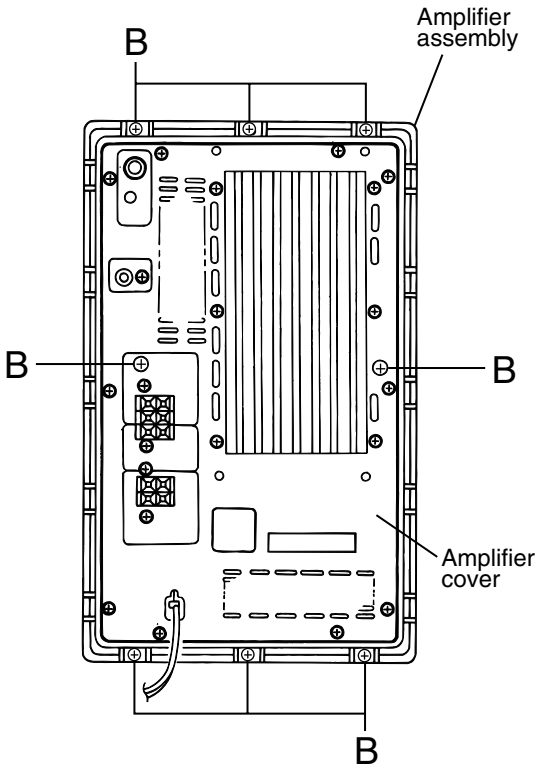


Fig.2

■Removing the preamplifier board (See Figs.4 to 6)

・ Prior to performing the following procedure, remove the heat sink cover, the amplifier assembly and the amplifier cover.

1. Remove the two screws F attaching the preamplifier board to the bracket.
2. Disconnect connector CN101 on the preamplifier board from the main amplifier board.
3. Pull out the switch knob.
4. Remove the nut and the two screws G attaching the bracket.

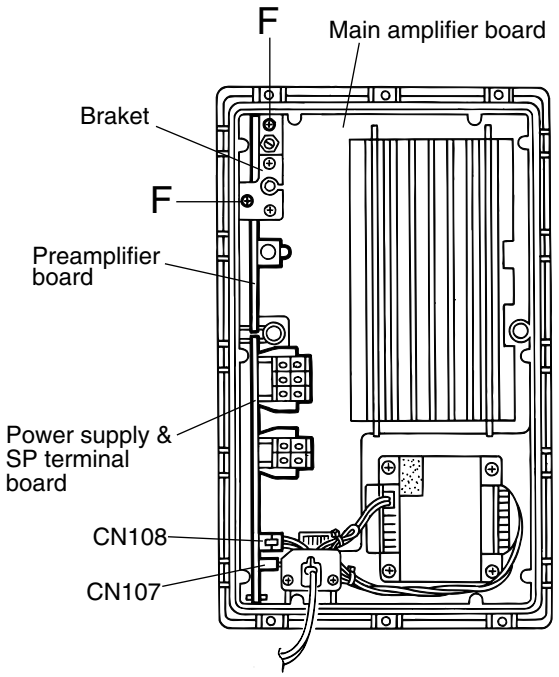


Fig.4

■Removing the power supply & SP terminal board (See Figs.4 and 5)

・ Prior to performing the following procedure, remove the heat sink cover, amplifier assembly and the amplifier cover.

1. Disconnect the wire from the connectors CN107 and CN108 on the power supply & SP terminal board.
2. Unplug the connectors CN110 and CN111 on the power supply & SP terminal board from the main amplifier board.

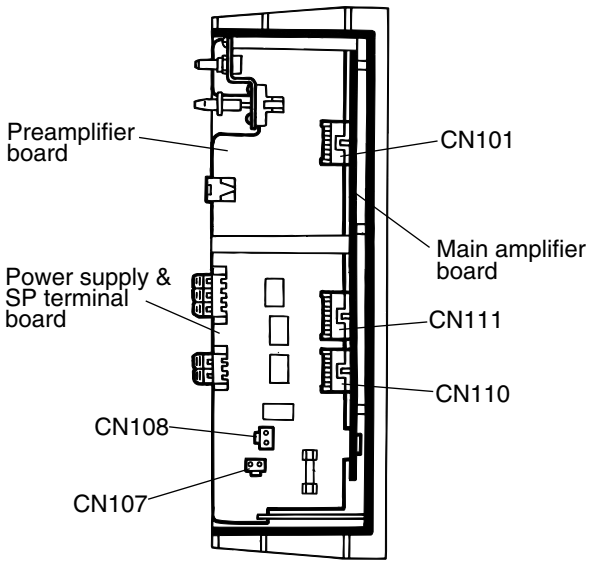


Fig.5

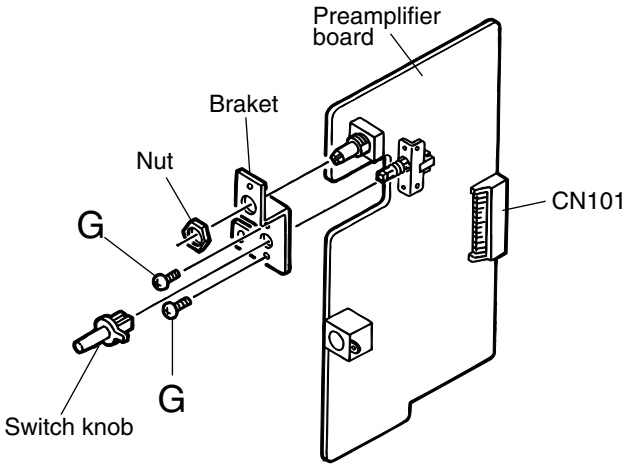


Fig.6

■Removing the Main amplifier Board (See Figs.7 and 8)

・ Prior to performing the following procedure, remove the heat sink cover, the amplifier board, the amplifier cover, the preamplifier board and the power supply & SP terminal board.

1. Disconnect the harness from connector CN104 on the main amplifier board.

2. Remove the seven screws H and the main amplifier board with the heat sink.

3. Remove the two screws I attaching the power amplifier board (A) and the two screws J attaching the power amplifier board (B) on the underside of the main amplifier board.

4. Disconnect connector CN102 and CN103 on the power amplifier board (A) and CN105 and CN106 on the power amplifier board (B) from the main amplifier board respectively.

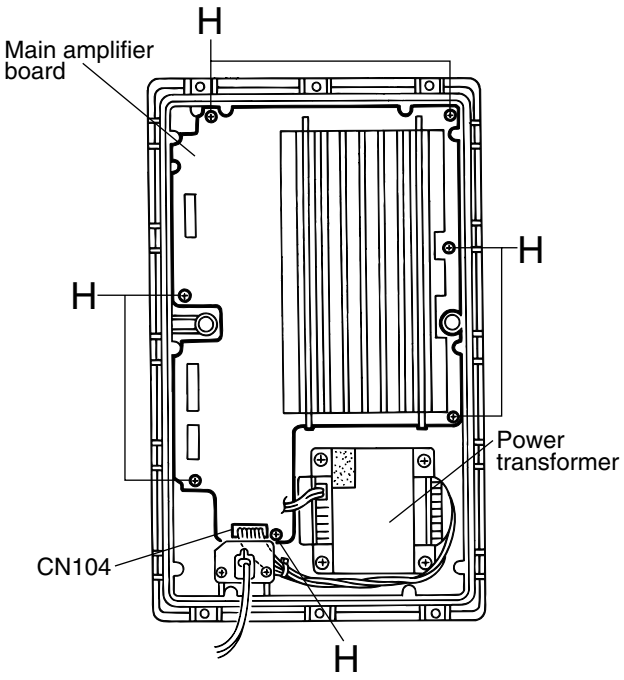


Fig.7

■Removing the power amplifier board (A) (See Figs.9 and 10)

・ Prior to performing the following procedure, remove the heat sink cover, amplifier assembly, the amplifier cover, the preamplifier board, the power supply & SP terminal board, the main amplifier board.

1. Remove the four screws K attaching the power amplifier board (A) to the heat sink.

2. Release the four joint hooks a bent and attached to the outside of the power amplifier board (A).

3. Move the power amplifier board (A) in the direction of the arrow to release joint b and remove the power amplifier board (A) from the bracket (A).

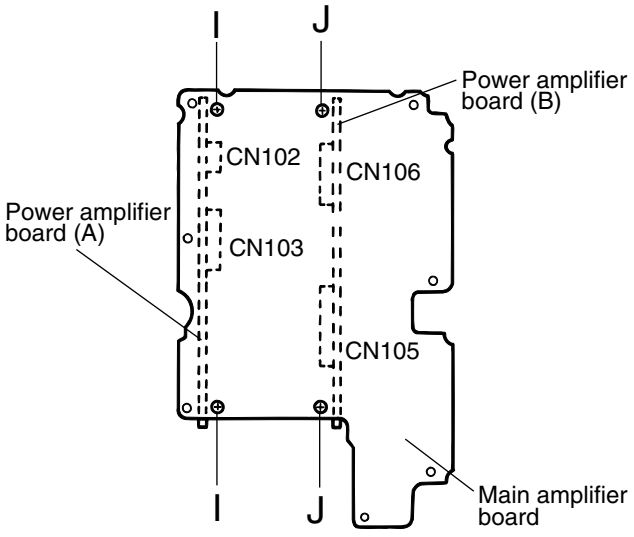


Fig.8

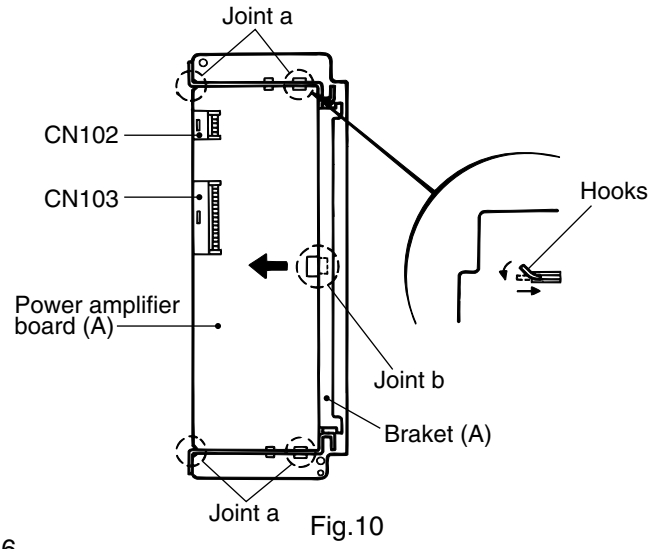


Fig.10

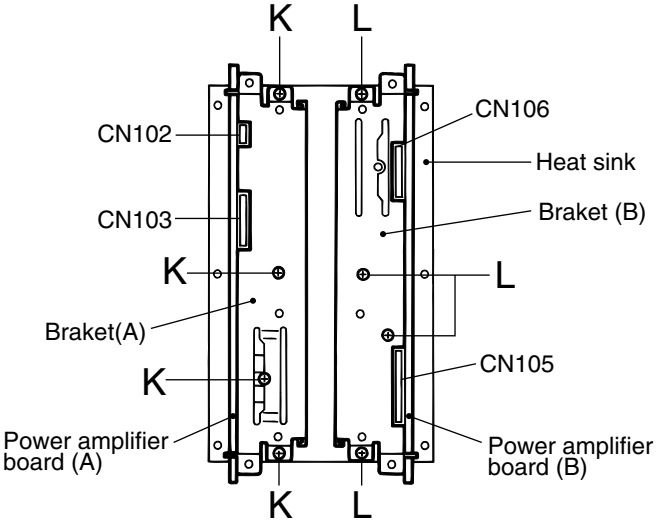


Fig.9

■Removing the power amplifier board (B) (See Figs.9 and 11)

・ Prior to performing the following procedure, remove the heat sink cover, the amplifier assembly, the amplifier cover, the preamplifier board, the power supply & SP terminal board, the main amplifier board and power amplifier board (A).

1. Remove the four screws L attaching the power amplifier board (B) to the heat sink.
2. Release the four joint hooks c bent and attached to the outside of the power amplifier board (B).
3. Move the power amplifier board (B) in the direction of the arrow to release joint d and remove the power amplifier board (B) from the bracket (B).

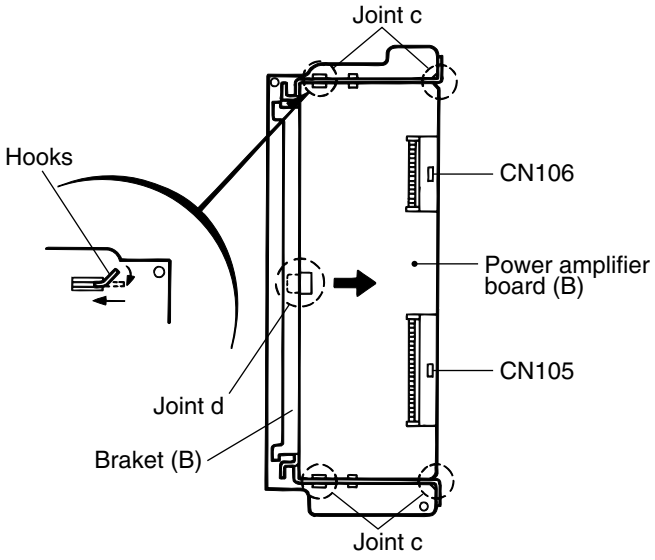


Fig.11

■Removing the power transformer (See Figs.12 and 13)

・ Prior to performing the following procedure, remove the heat sink cover, the amplifier assembly, the amplifier cover, the preamplifier board, the power supply & SP terminal board, the main amplifier board, the power amplifier board (A) and power amplifier board (B).

1. Disconnect the harness from connector CN104 on the main amplifier board.
2. Disconnect the wire from connector CN107 on the power supply & SP terminal board.
3. Remove the four screws M attaching the power transformer.

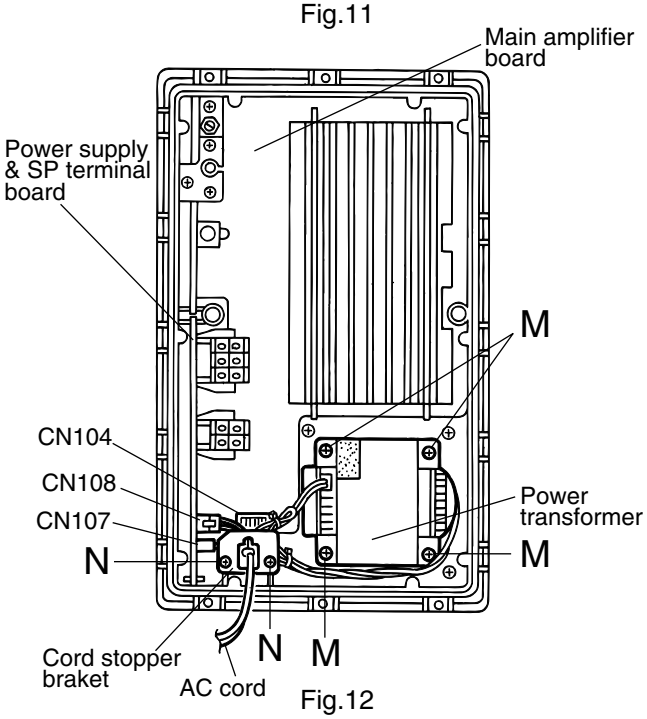


Fig.12

■Removing the AC power cord (See Fig.12)

・ Prior to performing the following procedure, remove the heat sink cover, the amplifier assembly, the amplifier cover, the preamplifier board, the power supply & SP terminal board, the main amplidier board, the power amplifier board (A), the power amplifier board (B) and power transformer.

1. Disconnect the wire from connector CN108 on the power supply & SP terminal board.
2. Remove the two screws N attaching the AC power cord.

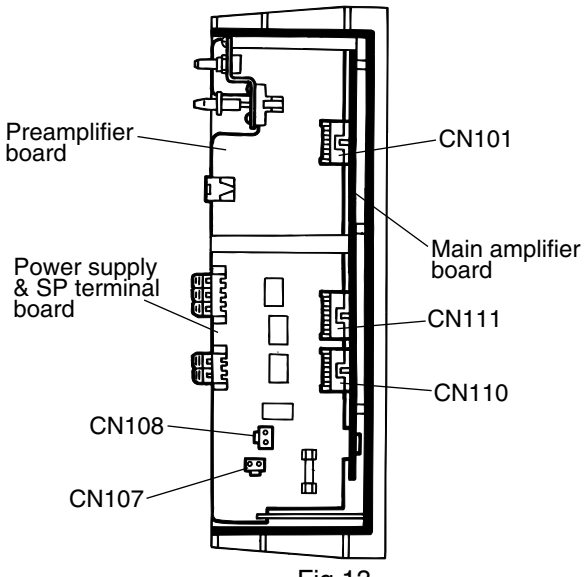


Fig.13

■Initialization of EEPROM

1. Make sure that no disc is present on the tray.

2. At first push the power switch to be on. Then the door slides to the position to be able to push the stop button. After that pull AC plug out.

3. While holding the STOP and OPEN/CLOSE keys on the main unit depressed, turn on the primary power supply.

4. The FL display should show "TEST JC 1".

5. Press the ENTER key on the remote controller.
   Initialization of the EEPROM starts (and lasts for about 3 seconds). The initialization has completed when the FL display shows "EEPROM" at the center.

6. Now the EEPROM initialization is complete.
   No key is accepted during the EEPROM initialization.
   To exit from the test mode, press the POWER key to enter the STAND-BY mode.

■Display of the laser current value

1. While holding the STOP and OPEN/CLOSE keys on the main unit depressed, plug the AC power cord into the power outlet.

2. The FL display should show "TEST".
   Note: When the power is in the STAND-BY mode or OFF, the stop key is hidden behind the door.
   Therefore, to facilitate the entry in the test mode, slide the door in advance so that the STOP key can be pressed even when the AC power is turned off by unplugging the AC power cord.

3. Press the "5" key on the remote controller in the test mode. The DVD laser will turn on and the FL display will show a message such as "03EXXXX". As the FL display shows a hexadecimal value, check the actual current value by referring to the conversion table to see if it is OK or not. (The actual laser current value is calculated by subtracting 15 mA from the value obtained with the conversion table.)

4. To exit from the test mode, press the POWER key to enter the STAND-BY (power off) mode.

FL Display conversion table

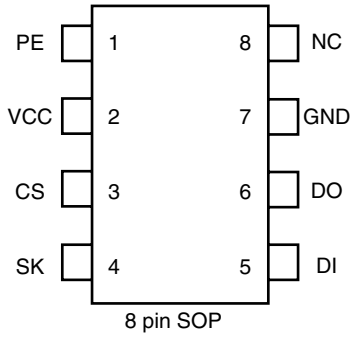
1.Current

FL Display	Current(mA)	Evalution	FL Display	Current(mA)	Evalution	FL Display	Current(mA)	Evalution
001c,001b	25	OK	03E5	59	OK	03AF,03AE	93	NG
001A	26	OK	03E4,03E3	60	OK	03Ad	94	NG
0019,0018	27	OK	03E2	61	OK	03Ac,03Ab	95	NG
0017	28	OK	03E1,03E0	62	OK	03AA,03A9	96	NG
0016,0015	29	OK	03dF,03dE,	63	OK	03A8	97	NG
0014,0013	30	OK	03dd	64	OK	03A7,03A6	98	NG
0012	31	OK	03dc,03db	65	NG	03A5	99	NG
0011,0010	32	OK	03dA	66	NG	03A4,03A3	100	NG
000f	33	OK	03d9,03d8	67	NG	03A2,03A1	101	NG
000e,000d	34	OK	03d7,03d6	68	NG	03A0	102	NG
000c,000b	35	OK	03d5	69	NG	039F,039E	103	NG
000A	36	OK	03d4,03d3	70	NG	039d,039c	104	NG
0009,0008	37	OK	03d2	71	NG	039b	105	NG
0007	38	OK	03d1,03d0	72	NG	039A,0399	106	NG
0006,0005	39	OK	03cF,03cE	73	NG	0398	107	NG
0004,0003	40	OK	03cd	74	NG	0397	108	NG
0002	41	OK	03cc,03cb	75	NG			
0001,0000	42	OK	03cA,03c9	76	NG			
03FF	43	OK	03c8	77	NG			
03FE,03Fd	44	OK	03c7,03c6	78	NG			
03Fc,03Fb	45	OK	03c5	79	NG			
03FA	46	OK	03c4,03c3	80	NG			
03F9,03F8	47	OK	03c2,03c1	81	NG			
03F7	48	OK	03c0	82	NG			
03F6,03F5	49	OK	03bF,03bE	83	NG			
03F4,03F3	50	OK	03bd	84	NG			
03F2	51	OK	03bc,03bb	85	NG			
03F1,03F0	52	OK	03bA,03b9	86	NG			
03EF,03EE	53	OK	03b8	87	NG			
03Ed	54	OK	03b7,03b6	88	NG			
03Ec,03Eb	55	OK	03b5	89	NG			
03EA	56	OK	03b4,03b3	90	NG			
03E9,03E8	57	OK	03b2,03b1	91	NG			
03E7,03E6	58	OK	03b0	92	NG			

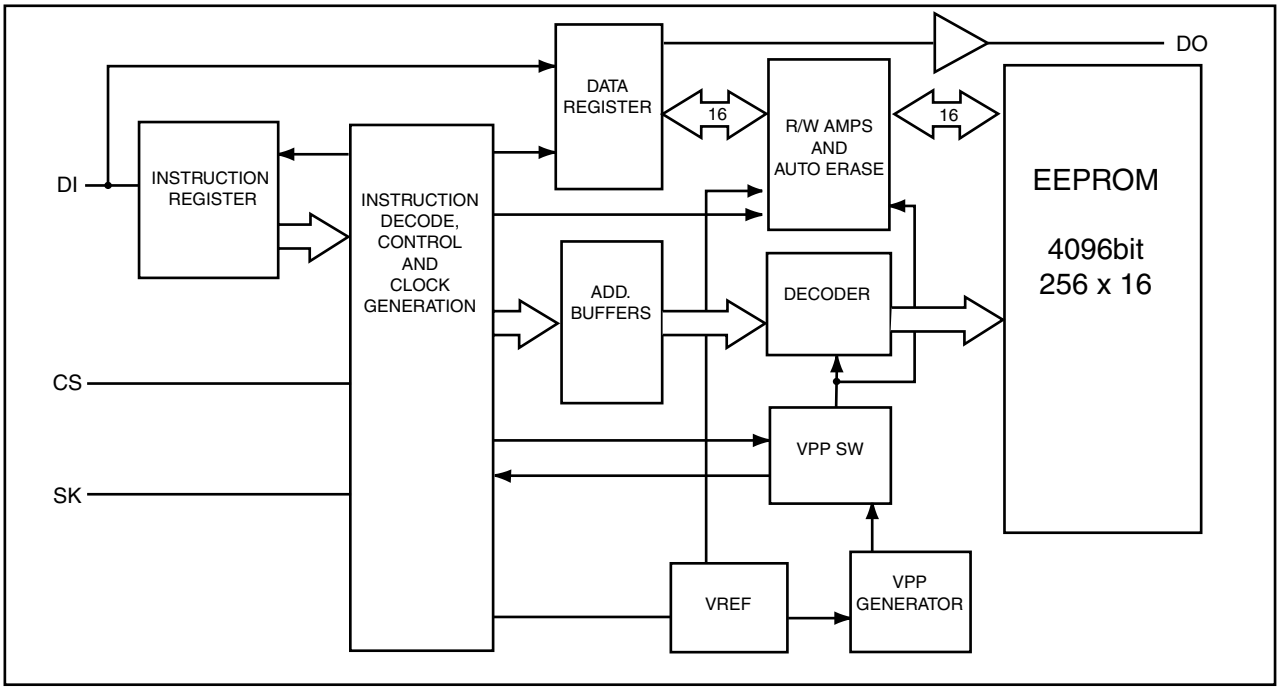
Discription of major IC's

■ AK93C65AF-X(IC403) : EEPROM

1.Terminal layout



2.Block diagram



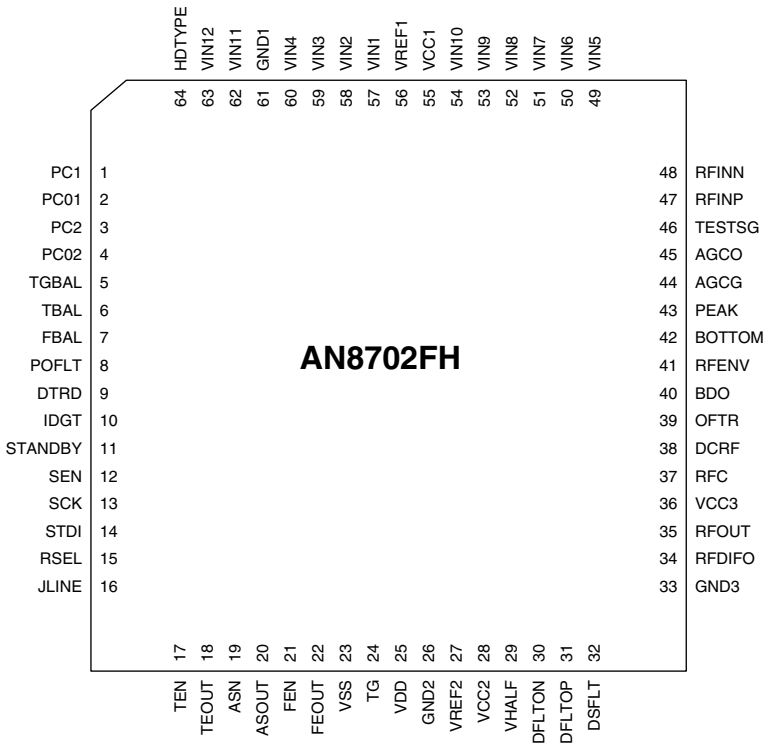
3.Pin function

Pin No.	Symbol	Function
1	PE	Program enable (With built-in pull up resistor)
2	VCC	Power supply
3	CS	Chip selection
4	SK	Serial clock input
5	DI	Serial data input
6	DO	Serial data output
7	GND	Ground
8	NC	No connection

Note : The pull-up resistor of the PE pin is about 2.5 M Ω (VCC=5V)

■ AN8702FH (IC101) : Frontend processor

1.Pin layout



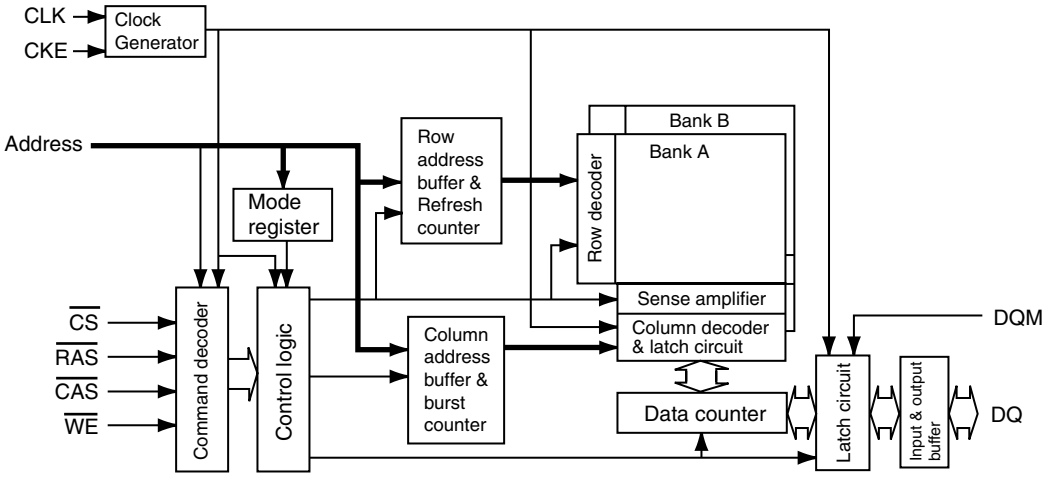
2. Pin function

AN8702FH

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	PC1			33	GND3	-	Earth terminal 3
2	PC01			34	RFDIFO		
3	PC2			35	RFOUT		
4	PC02			36	VCC3	-	Power terminal 3 (5V)
5	TGBAL	I	Tangential phase balance control terminal	37	RFC		
6	TBAL	I	Tracking balance control terminal	38	DCRF	O	BDO output terminal
7	FBAL	I	Focus balance control terminal	39	OFTR	O	OFTR output terminal
8	POFLT	O	Track detection threshold value level terminal	40	BDO	O	BDO output terminal
9	DTRD	I	Data slice data read signal input terminal (For RAM)	41	RFENV	O	RF enve output terminal
10	IDGT	I	Data slice part address part gate signal input terminal (For RAM)	42	BOTTOM	O	Bottom enve detection filter terminal
11	STANDBY	I	Standby mode control terminal	43	PEAK	O	Peak enve detection filter terminal
12	SEN	I	SEN(Sereal data input terminal)	44	AGCG	O	AGC amplifier gain control terminal
13	SCK	I	SCK(Sereal data input terminal)	45	AGCO		
14	STDI	I	STDI(Sereal data input terminal)	46	TESTSG	I	TEST signal input terminal
15	RSEL			47	RFINP	I	RF signal positive moving input terminal
16	JLINE			48	RFINN	I	RF signal reversing input terminal
17	TEN			49	VIN5	I	Focus input of external division into two terminal
18	TEOUT	O	Tracking error signal output terminal	50	VIN6	I	Focus input of external division into two terminal
19	ASN			51	VIN7	I	
20	ASOUT			52	VIN8	I	
21	FEN	I	Focus error output amplifier reversing input terminal	53	VIN9	I	
22	FEOUT	O	Focus error signal output terminal	54	VIN10	I	
23	VSS	-	Earth terminal	55	VCC1	-	Power terminal 1
24	TG	O	Tangential phase error signal output terminal	56	VREF1	O	VREF1 voltage output terminal
25	VDD	-	Power terminal (3V)	57	VIN1	I	External division into four (DVD/CD) RF input terminal 1
26	GND2	-	Earth terminal 2	58	VIN2	I	External division into four (DVD/CD) RF input terminal 2
27	VREF2	O	VREF2 voltage output terminal	59	VIN3	I	External division into four (DVD/CD) RF input terminal 3
28	VCC2	-	Power terminal (5V)	60	VIN4	I	External division into four (DVD/CD) RF input terminal 4
29	VHALF	O	VHALF voltage output terminal	61	GND1	-	Earth terminal 1
30	DFLTON			62	VIN11	I	
31	DFLTOP			63	VIN12	I	
32	DSFLT			64	HDTYPE		

■ HY57V161610DTC8 or W981616AH-7 or K4S161622D-TC80 (IC504,IC505) : 16MB SDRAM

1.Block diagram

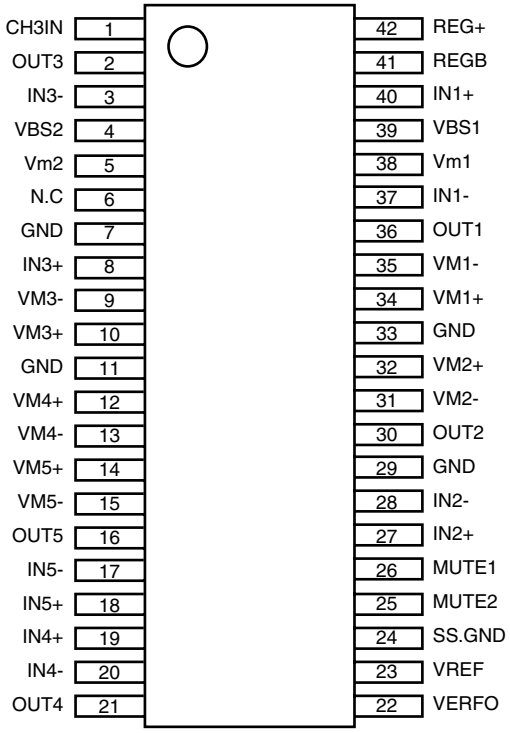


2.Pin function

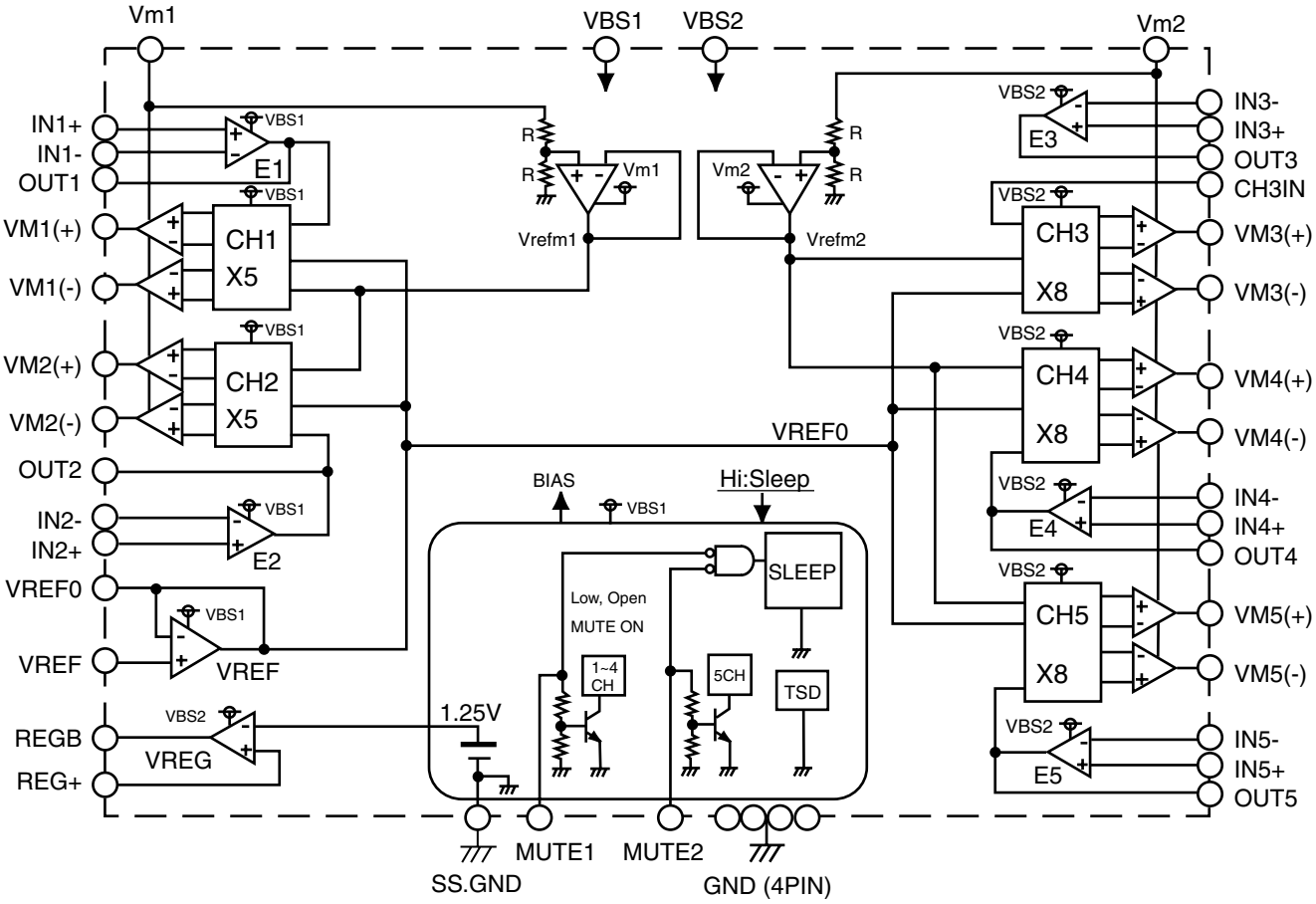
Pin No.	Symbol	Description	Pin No.	Symbol	Description
1	VCC	Power supply	26	VSS	Connect to GND
2,3	DQ0,1	Data input/output	27~32	A4~9	Address inputs
4	VSS	Connect to GND	33	NC	Non connect
5,6	DQ2,3	Data input/output	34	CKE	Clock enable
7	VDD	Power supply	35	CLK	System clock input
8,9	DQ4,5	Data input/output	36	UDQM	Upper DQ mask enable
10	VSS	Connect to GND	37	NC	Non connect
11,12	DQ6,7	Data input/output	38	VCC	Power supply
13	VCC	Power supply	39,40	DQ8,9	Data input/output
14	LDQM	Lower DQ mask enable	41	VSS	Connect to GND
15	$\overline{WE}$	Write enable	42,43	DQ10,11	Data input/output
16	$\overline{CAS}$	Column address strobe	44	VDD	Power supply
17	$\overline{RAS}$	Row address strobe	45,46	DQ12,13	Data input/output
18	$\overline{CS}$	Chip enable	47	VSS	Connect to GND
19,20	A11,10	Address inputs	48,49	DQ14,15	Data input/output
21~24	A0~3	Address inputs	50	VSS	Connect to GND
25	VCC	Power supply			

■ M56788FP-W(IC271) : Traverse mechanism driver

1.Pin layout



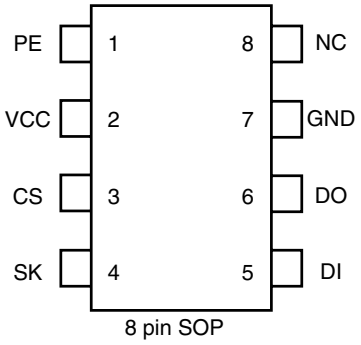
2.Block diagram



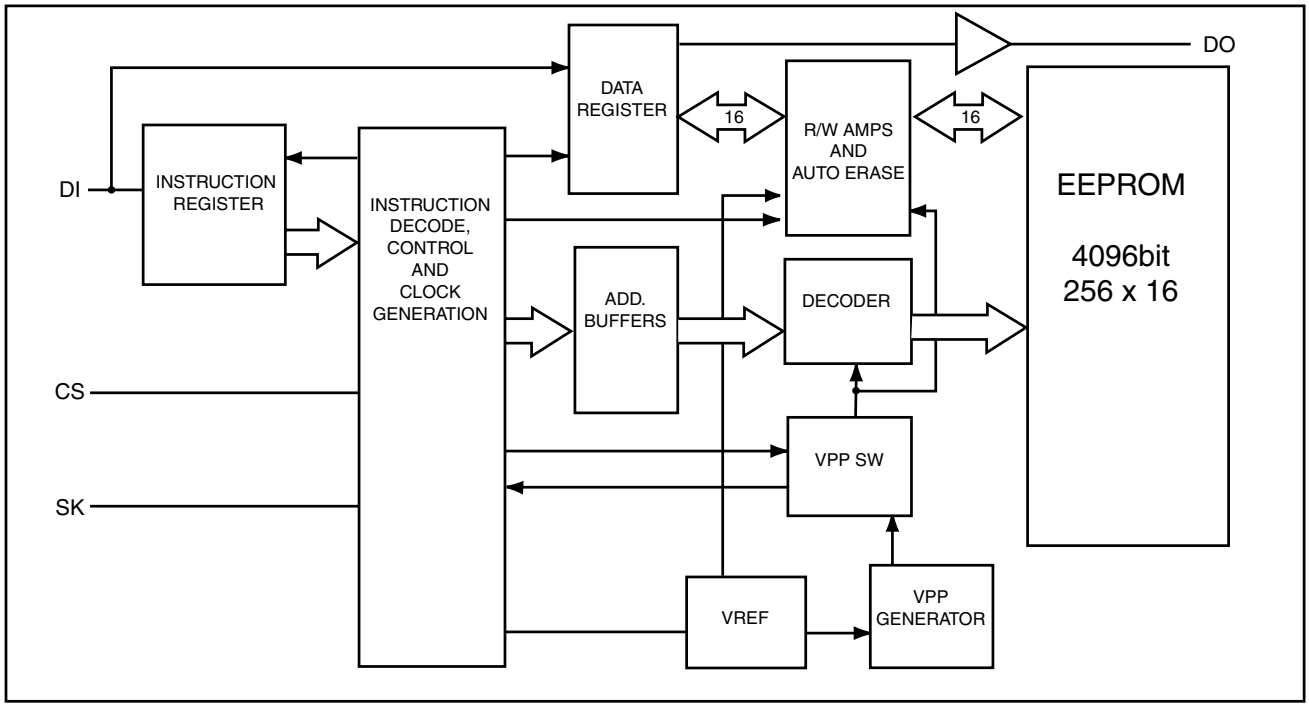
Discription of major IC's

■ AK93C65AF-X(IC403) : EEPROM

1.Terminal layout



2.Block diagram



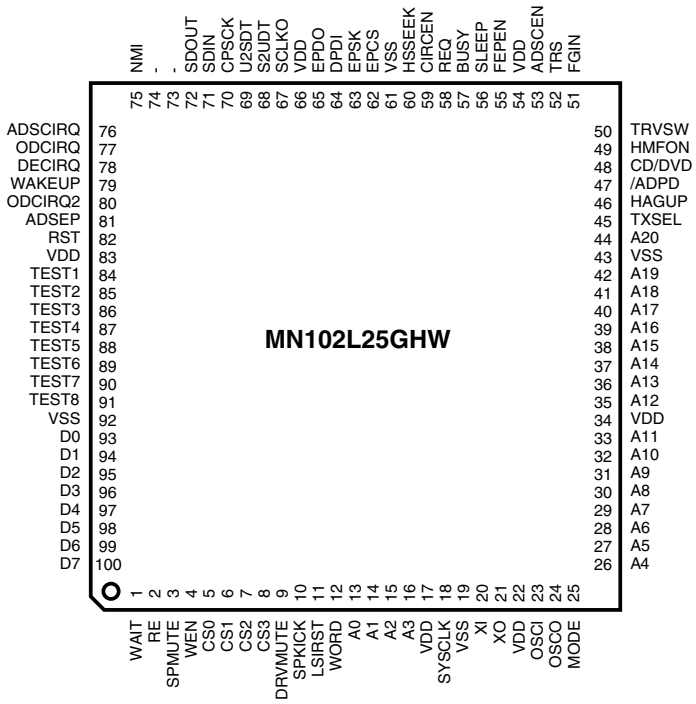
3.Pin function

Pin No.	Symbol	Function
1	PE	Program enable (With built-in pull up resistor)
2	VCC	Power supply
3	CS	Chip selection
4	SK	Serial clock input
5	DI	Serial data input
6	DO	Serial data output
7	GND	Ground
8	NC	No connection

Note : The pull-up resistor of the PE pin is about 2.5 M Ω (VCC=5V)

■ MN102L25GHW1(IC401) : UNIT CPU

1. Pin layout

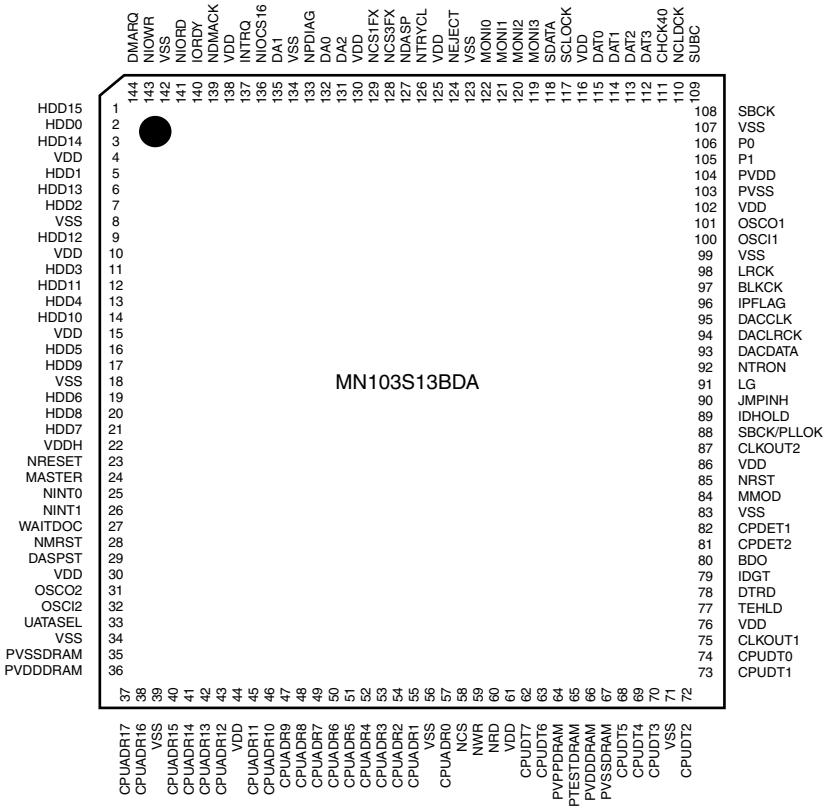


2.Pin function

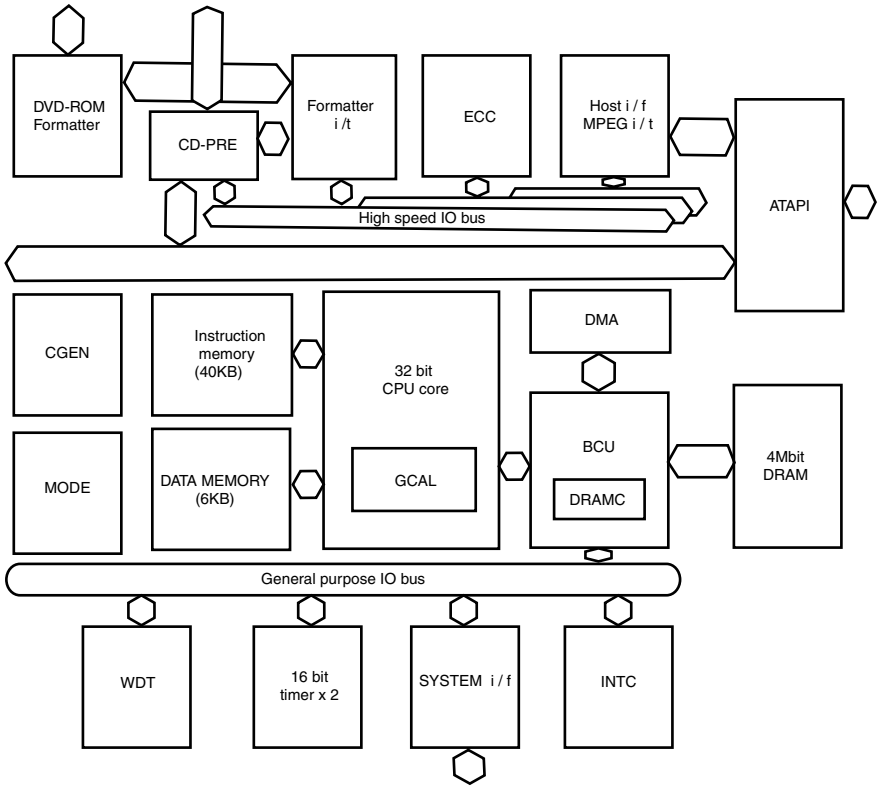
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	WAIT	I	Micon wait signal input	51	FGIN	I	Photo input
2	RE	O	Read enable	52	TRS		
3	SPMUTE	O		53	ADSCEN	O	Serial enable signal for ADSC
4	WEN	O	Write enable	54	VDD	-	Power supply
5	CS0	O	Non connect	55	FEPEN	O	Serial enable signal for FEP
6	CS1	O	Chip select for ODC	56	SLEEP	O	Standby signal for FEP
7	CS2	O	Chip select for ZIVA	57	BUSY	I	Communication busy
8	CS3	O	Chip select for outer ROM	58	REQ	O	Communication request
9	DRVMUTE	O	Driver mute	59	CIRCEN	O	CIRC command select
10	SPKICK	O	Non connect (Spin kick output)	60	HSSEEK	O	Seek select
11	LSIRST	O	LSI reset	61	VSS	-	GND
12	WORD	O	Bus selection input	62	EPCS	O	Chip select signal for EEPROM
13	A0	O	Address bus 0 for CPU	63	EPSK	O	Clock signal for EEPROM
14	A1	O	Address bus 1 for CPU	64	DPDI	I	Input data for EEPROM
15	A2	O	Address bus 2 for CPU	65	EPDO	O	Output data for EEPROM
16	A3	O	Address bus 3 for CPU	66	VDD	-	Power supply
17	VDD	-	Power supply	67	SCLKO	I	Communication clock
18	SYSCLK	O	System clock signal output	68	S2UDT	I	Communication input data
19	VSS	-	GND	69	U2SDT	O	Communication output data
20	XI	-	Non connect (Connect to VSS)	70	CPSCK	O	Clock for ADSC serial
21	XO	-	Non connect	71	SDIN	I	ADSC serial data input
22	VDD	-	Power supply	72	SDOUT	O	ADSC serial data output
23	OSCI	I	Clock signal input (13.5MHz)	73	-	-	Non connect
24	OSCO	O	Clock signal output (13.5MHz)	74	-	-	Non connect
25	MODE	I	CPU Mode selection input	75	NMI	-	Non connect
26	A4	O	Address bus 4 for CPU	76	ADSCIRQ	I	Interrupt input of ADSC
27	A5	O	Address bus 5 for CPU	77	ODCIRQ	I	Interrupt input of ODC
28	A6	O	Address bus 6 for CPU	78	DECIRQ	I	Interrupt input of ZIVA
29	A7	O	Address bus 7 for CPU	79	WAKEUP	O	Non connect
30	A8	O	Address bus 8 for CPU	80	ODCIRQ2	I	
31	A9	O	Address bus 9 for CPU	81	ADSEP	I	Address data selection input
32	A10	O	Address bus 10 for CPU	82	RST	I	Reset input
33	A11	O	Address bus 11 for CPU	83	VDD	-	Power supply
34	VDD	-	Power supply	84	TEST1	I	Test signal 1 input
35	A12	O	Address bus 12 for CPU	85	TEST2	I	Test signal 2 input
36	A13	O	Address bus 13 for CPU	86	TEST3	I	Test signal 3 input
37	A14	O	Address bus 14 for CPU	87	TEST4	I	Test signal 4 input
38	A15	O	Address bus 15 for CPU	88	TEST5	I	Test signal 5 input
39	A16	O	Address bus 16 for CPU	89	TEST6	I	Test signal 6 input
40	A17	O	Address bus 17 for CPU	90	TEST7	I	Test signal 7 input
41	A18	O	Address bus 18 for CPU	91	TEST8	I	Test signal 8 input
42	A19	O	Address bus 19 for CPU	92	VSS	-	GND
43	VSS	-	GND	93	D0	I/O	Data bus 0 of CPU
44	A20	O	Address bus 20 for CPU	94	D1	I/O	Data bus 1 of CPU
45	TXSEL	O	TX select	95	D2	I/O	Data bus 2 of CPU
46	HAGUP	O		96	D3	I/O	Data bus 3 of CPU
47	/ADPD			97	D4	I/O	Data bus 4 of CPU
48	CD/DVD	O		98	D5	I/O	Data bus 5 of CPU
49	HMFON			99	D6	I/O	Data bus 6 of CPU
50	TRVSW	I	Detection switch of traverse inside	100	D7	I/O	Data bus 7 of CPU

■ MN103S13BDA(IC301) : Optical disc controller

1. Pin layout



2.Block diagram

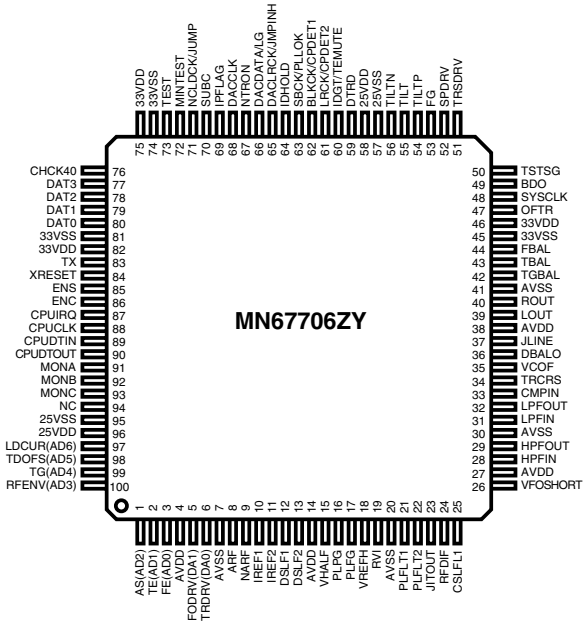


3.Pin function

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	HDD15	I/O	ATAPI data	73	CPUDT1	I/O	System control data
2	HDD0	I/O	ATAPI data	74	CPUDT0	I/O	System control data
3	HDD14	I/O	ATAPI data	75	CLKOUT1	O	16.9/11.2/8.45MHz clock
4	VDD	-	Power supply (3V)	76	VDD	-	Power supply (3V)
5	HDD1	I/O	ATAPI data	77	TEHLD	O	Mirror gate (Connect with TP141)
6	HDD13	I/O	ATAPI data	78	DTRD	O	Frequency control switch for data (Connect with TP304)
7	HDD2	I/O	ATAPI data	79	IDGT	O	Part CAPA switch
8	VSS	-	GND	80	BDO	I	RF dropout / BCA data
9	HDD12	I/O	ATAPI data	81	CPDET2	I	Outer side CAPA detection
10	VDD	-	Power supply (2.7V)	82	CPDET1	I	Inner side CAPA detection
11	HDD3	I/O	ATAPI data	83	VSS	-	GND
12	HDD11	I/O	ATAPI data	84	MMOD	I	Connect with VSS
13	HDD4	I/O	ATAPI data	85	NRST	I	System reset
14	HDD10	I/O	ATAPI data	86	VDD	-	Power supply (3V)
15	VDD	-	Power supply (3V)	87	CLKOUT2	O	16.9MHz clock
16	HDD5	I/O	ATAPI data	88	SBCK/PLLOK	O	Frame mark detection
17	HDD9	I/O	ATAPI data	89	IDOHOLD	O	ID gate for holding tracking
18	VSS	-	GND	90	JMPINH	O	Jump prohibition
19	HDD6	I/O	ATAPI data	91	LG	O	Land / group switch
20	HDD8	I/O	ATAPI data	92	NTRON	I	Tracking ON
21	HDD7	I/O	ATAPI data	93	DACDATA	O	Serial output
22	VDDH			94	DACLRCK	O	L and R identification output
23	NRESET	I	ATAPI reset	95	DACCLK	I	Clock for serial output
24	MASTER	I/O	ATAPI master / slave selection	96	IPFLAG	I	IP flag input
25	NINT0	O	System control interruption 0	97	BLKCK	I	Clock for sub-code and block input
26	NINT1	O	System control interruption 1	98	LRCK	I	L and R identification signal output
27	WAITDOC	O	System control wait control	99	VSS	-	GND
28	NMRST	O	System control reset (Connect with TP302)	100	OSCI1	I	16.9MHz oscillation
29	DASPST	I	DASP signal initializing	101	OSCO1	O	16.9MHz oscillation
30	VDD	-	Power supply (3V)	102	VDD	-	Power supply (3V)
31	OSCO2	O	Not used (Connect with TP140)	103	PVSS	-	GND
32	OSCI2	I	Not used (Connect with TP303)	104	PVDD	-	Power supply (3V)
33	UATASEL	I	VSS connection	105	P1	I/O	Terminal MASTER polarity switch input
34	VSS	-	GND	106	P0	I/O	CIRC-RAM OVER/UNDER Interruption signal input
35	PVSSDRAM		VSS connection	107	VSS	-	GND
36	PVDDDRAM		Connect with 2.7V VDD	108	SBCK	O	Sub-code and Clock output for serial input
37	CPUADR17	I	System control address	109	SUBC	I	Sub-code and serial input
38	CPUADR18	I	System control address	110	NCLDCK	I	Sub-code and Frame clock input
39	VSS	-	GND	111	CHCK40	I	Read clock to DAT3~0 (Output of dividing frequency four from ADSC)
40	CPUADR15	I	System control address	112	DAT3	I	Read data from DISC (Parallel output from ADSC)
41	CPUADR14	I	System control address	113	DAT2	I	Read data from DISC (Parallel output from ADSC)
42	CPUADR13	I	System control address	114	DAT1	I	Read data from DISC (Parallel output from ADSC)
43	CPUADR12	I	System control address	115	DAT0	I	Read data from DISC (Parallel output from ADSC)
44	VDD	-	Power supply (2.7V)	116	VDD	-	Power supply (3V)
45	CPUADR11	I	System control address	117	SCLOCK	I/O	Debugging serial clock (270 Ω pull up)
46	CPUADR10	I	System control address	118	SDATA	I/O	Debugging serial data (270 Ω pull up)
47	CPUADR9	I	System control address	119	MONI3	O	Internal goods title monitor (Connect to TP150)
48	CPUADR8	I	System control address	120	MONI2	O	Internal goods title monitor (Connect to TP151)
49	CPUADR7	I	System control address	121	MONI1	O	Internal goods title monitor (Connect to TP152)
50	CPUADR6	I	System control address	122	MONI0	O	Internal goods title monitor (Connect to TP153)
51	CPUADR5	I	System control address	123	VSS	-	GND
52	CPUADR4	I	System control address	124	NEJECT	I	Eject detection
53	CPUADR3	I	System control address	125	VDD	-	Power supply (2.7V)
54	CPUADR2	I	System control address	126	NTRYCL	I	Tray close detection
55	CPUADR1	I	System control address	127	NDASP	I/O	ATAPI Drive active/Slave connection I/O
56	VSS	-	GND	128	NCS3FX	I	Not used (ATAPI host chip selection)
57	CPUADR0	I	System control address	129	NCS1FX	I	Not used (ATAPI host chip selection)
58	NCS	I	System control chip selection	130	VDD	-	Power supply (3V)
59	NWR	I	System control write	131	DA2	I/O	ATAPI host address
60	NRD	I	System control read	132	DA0	I/O	Not used (ATAPI host address)
61	VDD	-	Power supply (3V)	133	NPDIAG	I/O	ATAPI slave/master diagnosis input
62	CPUDT7	I/O	System control data	134	VSS	-	GND
63	CPUDT6	I/O	System control data	135	DA1	I/O	Not used (ATAPI host address)
64	PVPPDRAM	O	Connect with VSS	136	NIOCS16	O	ATAPI output for selecting width of host data bus
65	PTESTDRAM	I	Connect with VSS	137	INTRQ	O	ATAPI host interruption output
66	PVDDDRAM		Connect with VDD (2.7V)	138	VDD	-	Power supply (3V)
67	PVSSDRAM		Connect with VSS	139	NDMACK	I	Not used (ATAPI host DMA response)
68	CPUDT5	I/O	System control data	140	IORDY	O	ATAPI host ready output (Connect to TP157)
69	CPUDT4	I/O	System control data	141	NIORD	I	Not used (ATAPI host read)
70	CPUDT3	I/O	System control data	142	VSS	-	GND
71	VSS	-	GND	143	NIOWR	I/O	ATAPI host writes
72	CPUDT2	I/O	System control data	144	DMARQ	O	ATAPI host DMA demand (Connect to TP159)

■ MN67706ZY(IC201) : ADSC

1.Pin layout

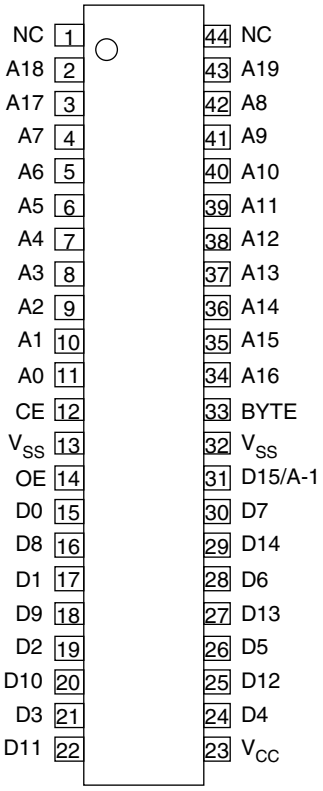


2.Pin function

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	AS(AD2)	I	AS : All added signal (FEP)	51	TRSDRV	O	Traverse drive (DRVIC)
2	TE(AD1)	I	Tracking error (FEP)	52	SPDRV	O	Spindle drive output (DRVIC)
3	FE(AD0)	I	Focus error (FEP)	53	FG	I	FG signal input (spindle motor driver)
4	AVDD	-	Power supply for analog circuit (3.3V)	54	TILTP	O	Connect with TP205
5	FODRV(DA1)	O	Focus drive (DRVIC)	55	TILT	O	Connect with TP206
6	TRDRV(DA0)	O	Tracking drive (DRVIC)	56	TILTN	O	Connect with TP207
7	AVSS	-	Ground for analog circuit	57	25VSS	-	For internal core GND
8	ARF	I	Equalized RF+(FEP)	58	25VDD	-	Power supply for internal core (2.5V)
9	NARF	I	Equalized RF–(FEP)	59	DTRD	I	Data read control signal (ODC)
10	IREF1	I	Reference power supply 1 for DBAL	60	IDGT/TEMUTE	I	Pull down for GND
11	IREF2	I	Reference power supply 2 for DBAL	61	LRCK/CPDET2	O	LR channel data strobe (ODC)/
12	DSLF1	I/O	Capacitor 1 for DSL	62	BLKCK/CPDET1	O	CD sub code synchronize signal (ODC)/
13	DSLF2	I/O	Capacitor 2 for DSL	63	SBCK/PLLOK	I	CD sub-code data shift clock (ODC)/SYNC detection
14	AVDD	-	Power supply for analog circuit (3.3V)	64	IDHOLD	I	Pull down for GND
15	VHALF	I	Reference voltage 1.65±0.1V(FEP)	65	DACLRCK/JMPINH	I	1 bit DAC-LR channel data strobe (ODC)/
16	PLPG	-	Not used	66	DACDATA/LG	I	CD1 bit DAC channel data (ODC)
17	PLFG	-	Not used	67	NTRON	O	L:tracking ON (ODC)
18	VREFH	I	Reference voltage 2.2V±0.1V(FEP)	68	DACCLK	O	1 bit DAC channel data shift clock (ODC)
19	RVI	I/O	VREFH reference power supply for resistor	69	IPFLAG	O	CIRC error flag (ODC)
20	AVSS	-	Ground for analog circuit	70	SUBC	O	CD sub code (ODC)
21	PLFLT1	O	Capacitor 1 for PLL	71	NCLDCK/JUMP	O	CD sub code data frame clock (ODC)/DVD JUMP signal (ODC)
22	PLFLT2	O	Capacitor 2 for PLL	72	MINTEST	I	Connects with DVSS (for MINTEST)
23	JITOUT	I/O	Detection signal output of jitter	73	TEST	I	Connects with DVSS (for TEST)
24	RFDIF	I	Not used	74	33VSS	-	For I/O GND
25	CSLFL1	I/O	Pull up for VHALF	75	33VDD	-	Power supply for I/O (3.3V)
26	VFOSHORT	O	VFO short output	76	CHCK40	O	For SRDATA clock (ODC)
27	AVDD	-	Power supply for analog circuit (3.3V)	77	DAT3	O	SRDATA3(ODC)
28	HPFIN	I	Pull up for VHALF	78	DAT2	O	SRDATA2(ODC)
29	HPFOUT	O	Connect woth TP208	79	DAT1	O	SRDATA1(ODC)
30	AVSS	-	Ground for analog circuit	80	DAT0	O	SRDATA0(ODC)
31	LPFIN	I	Pull up for VHALF	81	33VSS	-	For I/O GND
32	LPFOUT	O	Not used	82	33VDD	-	Power supply for I/O (3.3V)
33	CMPIN	I	Connect with TP210	83	TX	O	Digital audio interface
34	TRCRS	I	Track crossing signal (FEP)	84	XRESET	I	Reset L : Reset
35	VCOF	I/O	JFVCO control voltage	85	ENS	I	Servo DSC sereal I/F chip select (SYSCON)
36	DBALO	O	DSL balance adjustment output	86	ENC	I	CIRC sereal I/F chip select (SYSCON)
37	JLINE	O	J-line preset output (FEP)	87	CPUIRQ	O	Interrupt request to silicon (SYSCON)
38	AVDD	-	Power supply for analog circuit (3.3V)	88	CPUCLK	I	Silicon cereal I/F clock (SYSCON)
39	LOUT	O	Connect with TP203 (analog audio L out)	89	CPUDTIN	I	Silicon cereal I/F data input (SYSCON)
40	ROUT	O	Connect with TP204 (analog audio R out)	90	CPUDTOUT	O	Silicon cereal I/F data output (SYSCON)
41	AVSS	-	Ground for analog circuit	91	MONA	O	Monitor terminal A (connect with TP226)
42	TGBAL	O	Tangential balance (FEP)	92	MONB	O	Monitor terminal B (connect with TP225)
43	TBAL	O	Tracking balance (FEP)	93	MONC	O	Monitor terminal C (connect with TP224)
44	FBAL	O	Focus balance (FEP)	94	NC	O	Not used (connect with TP211)
45	33VSS	-	For I/O GND	95	25VSS	-	For internal core GND
46	33VDD	-	Power supply for I/O (3.3V)	96	25VDD	-	Power supply for internal core (2.5V)
47	OFTR	I	Off-track error signal (FEP)	97	LDCUR(AD6)	I	
48	SYSCLK	I	16.9344MHz system clock input (ODC)	98	TDOFS(AD5)	I	
49	BDO	I	BDO + BCA (FEP)	99	TG(AD4)	I	Tangential Phase difference (FEP)
50	TSTSG	O	Self calibration signal (FEP)	100	RFENV(AD3)	I	RFENV (FEP)

■ K3N5C1000D-J007(IC402) : 1M x 16Bit/2M x 8Bit change enable ROM

1.Pin layout

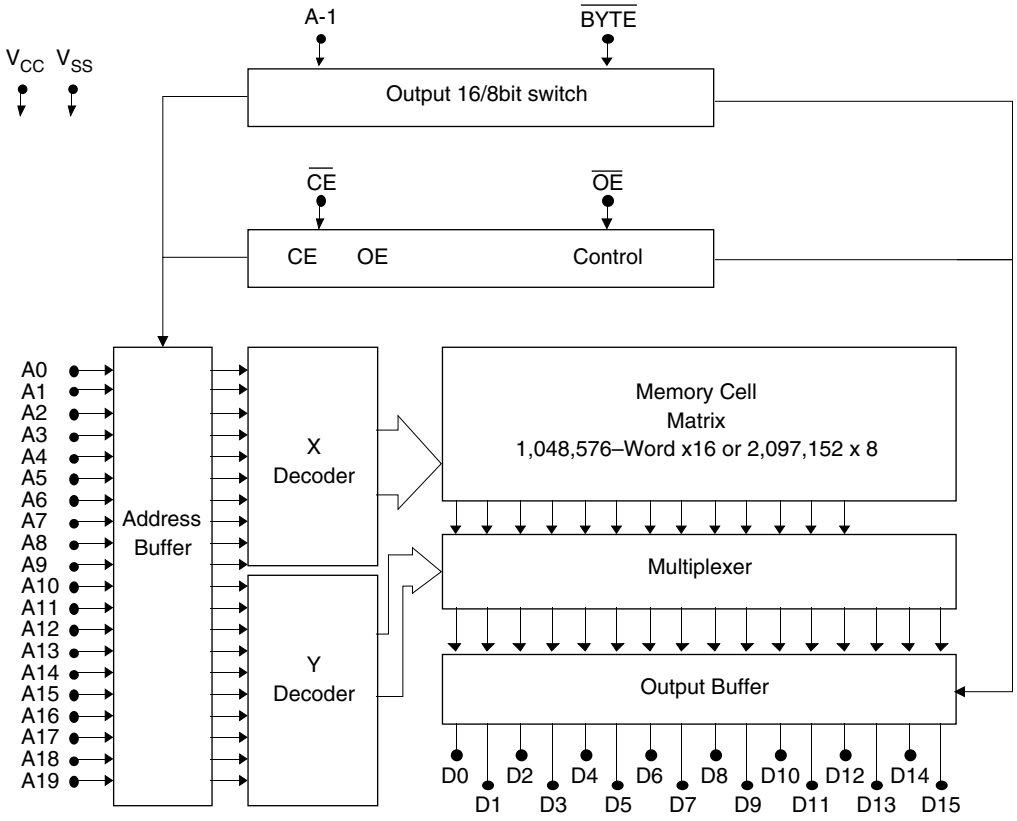


44 pin SOP

3.Pin function

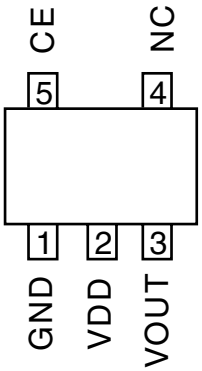
Symbol	Function
D15/A-1	Address input (For 8bit output)
A0~A19	Address input
D0~D15	Data output
$\overline{CE}$	Chip enable
$\overline{OE}$	Chip enable
$\overline{BYTE}$	Output 16/8bit select L : 8bit output + H : 16bit output
V_{CC}, V_{SS}	Power supply
NC	No connection

2.Block diagram

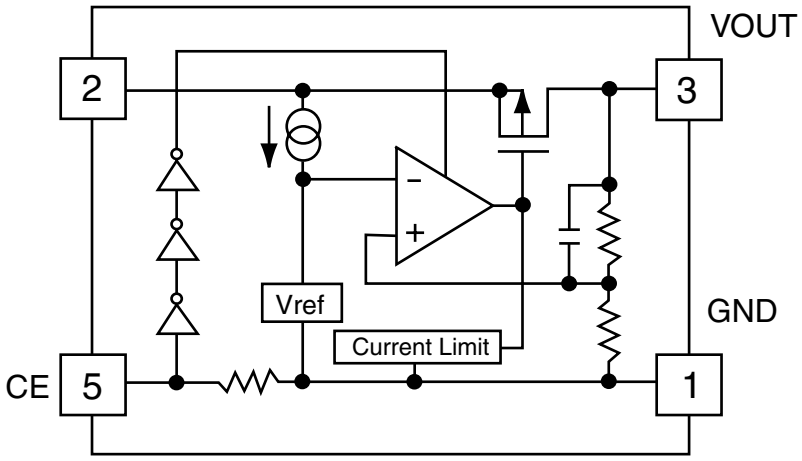


■ RN5RZ33BA-X(IC1, IC102) : High cycle module

1.Terminal layout



2.Block diagram



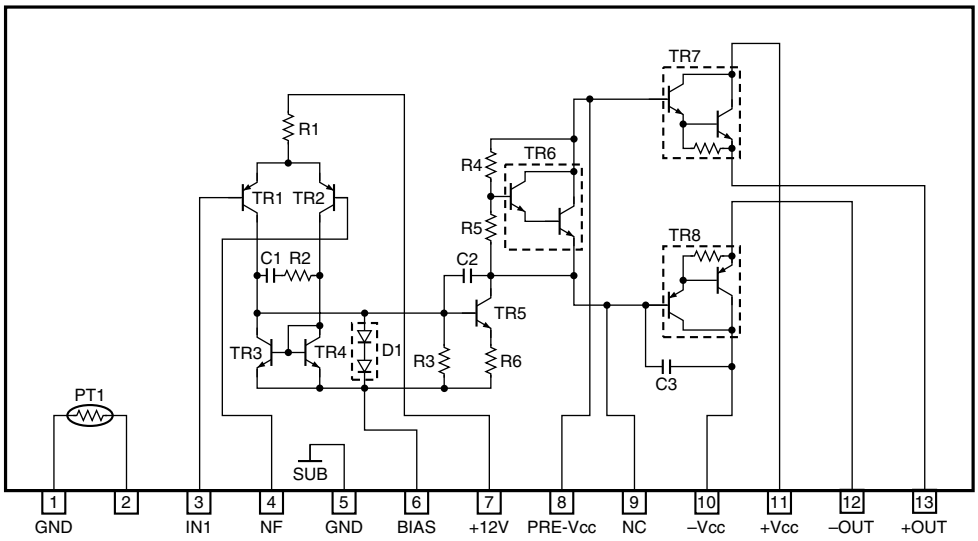
3.Pin function

Pin No.	Pin name	Function
1	GND	Ground terminal
2	VDD	Input terminal
3	VOUT	Output terminal
4	NC	No connection
5	CE	Chip enable terminal

■ STK404-130(IC105) : Power amp

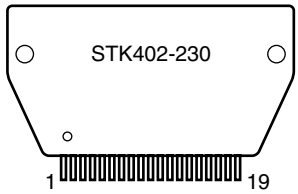
1.Terminal layout

2.Block diagram

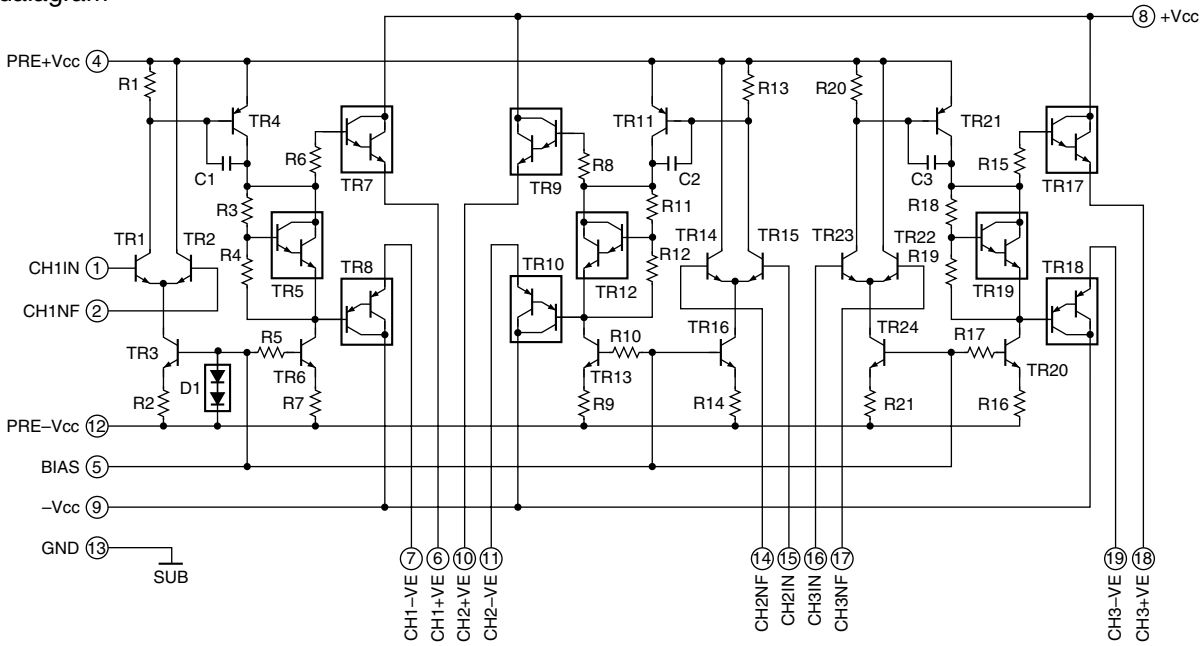


■ STK402-230(IC107) : Power amp

1. Terminal layout

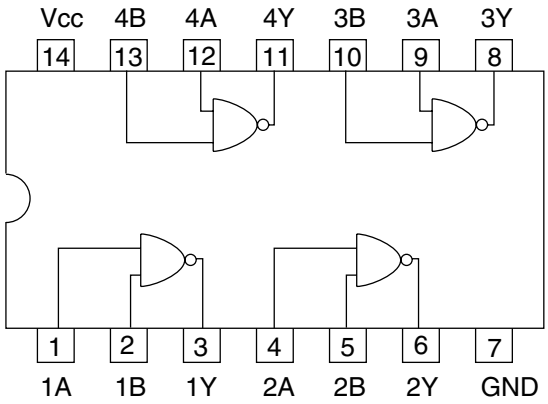


2.Block daiagram



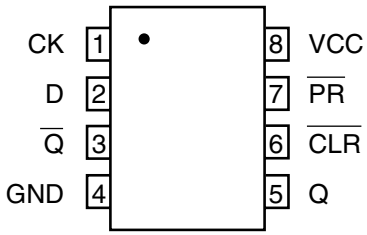
■ TC74VHC00FT-X(IC322,IC503) : Write timing control

1.Pin layout /Block diagram



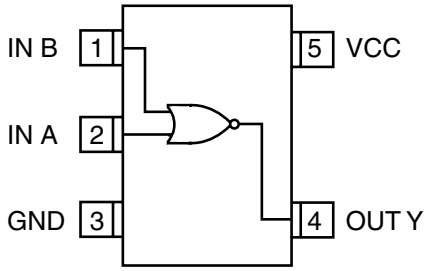
■ TC7WH74FU-X(IC321) : Clock buffer

1.Terminal layout



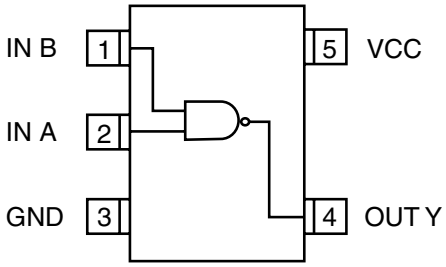
■ TC7SH32FU-X(IC312) : Timing control

1.Terminal layout



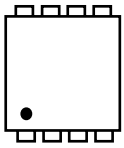
■ TC7SH08FU-X(IC311) : Timing control

1.Terminal layout

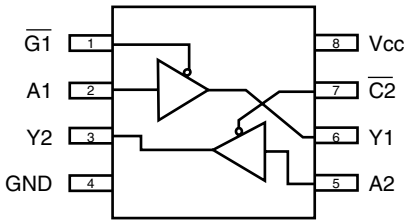


■ TC7W125FU-X(IC202) : Buffer

1.Terminal layout

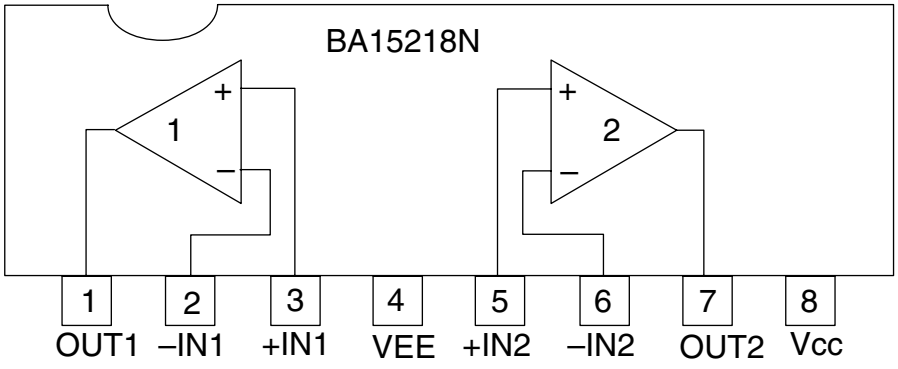


2.Block diagram



■ BA15218N(IC104,IC108,IC109,IC110) : OP AMP

1.Pin layout / Block diagram



■ ZIVA3-PE0 (IC501) : AV Decoder

1. Terminal Description

ZIVA3-PEO (1/5)

Pin No.	Symbol	I/O	Function
1	PIO0	I/O	Programmable I/O pin, which enters input mode after resetting.
2	HDATA0	I/O	8-bit, bi-directional host data bus. Write data in decoder Code FIFO via HDATA. The 32-bit word MSB is written first. The host reads and writes the internal register of the decoder and local SRAM via HDATA.
3	HDATA1		
4	HDATA2		
5	VDD-3.3	-	3.3 V supply voltage for I/O signals.
6	HDATA3	I/O	8-bit, bi-directional host data bus. Writes data in decoder Code FIFO via HDATA. The 32-bit word MSB is written first. The host reads and writes the internal register of the decoder and local SRAM via HDATA.
7	VSS	-	Core logic and I/O signal grounding.
8	HDATA4	I/O	8-bit, bi-directional host data bus. Write data in decoder Code FIFO via HDATA. The 32-bit word MSB is written first. The host reads and writes the internal register of the decoder and local SRAM via HDATA.
9	HDATA5		
10	HDATA6		
11	HDATA7		
12	VDD-2.5	-	2.5 V supply voltage for the core logic.
13	$\overline{\text{RESET}}$	I	Hardware reset. An external device expresses $\overline{\text{RESET}}$ (Active Low) to execute hardware resetting of the decoder. RESET is expressed for at least 20 ms to guarantee optimum initialization to occur after power has stabilized.
14	VSS	-	Core logic and I/O signal grounding.
15	$\overline{\text{WAIT}}$/$\overline{\text{DTACK}}$	O	Transfer incomplete/data acknowledgement, which is an Active Low signal indicating that transfer started by the host is not completed. $\overline{\text{WAIT}}$ is expressed after negative going edge of $\overline{\text{CS}}$, and expressed again when the decoder is ready for completing the transfer cycle. As the signal for opening the drain should be pulled up from 1 V to 3.3 V, it is driven at high speed for 10 ns before the tri-state condition is entered.
16	$\overline{\text{INT}}$	O	Host interrupt. As the signal for opening the drain should be pulled up from 4.7 V to 3.3 V, it is driven at high speed for 10 ns before the tri-state condition is entered.
17	VDD-3.3	-	3.3 V supply voltage for I/O signals.
18	NC	O	No connection.
19	VSS	-	Core logic and I/O signal grounding.
20	NC	O	No connection.
21	PIO11	I/O	Programmable I/O pins, which enter input mode. after resetting.
22	PIO12		
23	PIO13		
24	PIO14		
25	PIO15		
26	PIO16		
27	VDD-3.3	-	3.3 V supply voltage for I/O signals.
28	PIO17	I/O	Programmable I/O pin, which enters input mode after resetting.
29	VSS	-	Core logic and I/O signal grounding.
30	PIO18	I/O	Programmable I/O pin, which enters input mode after
31	PIO19	I/O	Programmable I/O pins, which enter output mode after resetting.
32	PIO20		
33	PIO21		
34	PIO22		
35	PIO23		
36	VDD-3.3	-	3.3 V supply voltage for I/O signals.
37	PIO24	I/O	Programmable I/O pin, which enters output mode after resetting.
38	VSS	-	Core logic and I/O signal grounding.
39	PIO25	I/O	Programmable I/O pin, which enters output mode after resetting.
40	VDD-2.5	-	2.5 V supply voltage for the core logic.
41	PIO26	I/O	Programmable I/O pin, which enters output mode after resetting.
42	VSS	-	Core logic and I/O signal grounding.

ZIVA3-PEO (2/5)

Pin No.	Symbol	I/O	Function
44	PIO28	I/O	Programmable I/O pins, which enter output mode after resetting.
45	PIO29		
46	PIO30		
47	VDD-3.3	-	3.3 V supply voltage for I/O signals.
48	PIO31	I/O	Programmable I/O pin, which enters output mode after resetting.
49	VSS	-	Core logic and I/O signal grounding.
50	NC	O	No connection.
51			
52	PIO1	I/O	Programmable I/O pin, which enters input mode after resetting.
53	MDATA15	I/O	Memory data.
54	MDATA0	I/O	Memory data.
55	VDD-3.3	-	3.3 V supply voltage for I/O signals.
56	MDATA14	I/O	Memory data.
57	VSS	-	Core logic and I/O signal grounding.
58	MDATA1	I/O	Memory data.
59	MDATA13		
60	MDATA2		
61	VDD-3.3	-	3.3 V supply voltage for I/O signals.
62	MDATA12	I/O	Memory data.
63	VSS	-	Core logic and I/O signal grounding.
64	MDATA3	I/O	Memory data.
65	VDD-2.5	-	2.5 V supply voltage for the core logic.
66	MDATA11	I/O	Memory data.
67	VSS	-	Core logic and I/O signal grounding
68	MDATA4	I/O	Memory data.
69	VDD-3.3	-	3.3 V supply voltage for I/O signals.
70	MDATA10	I/O	Memory data.
71	VSS	-	Core logic and I/O signal grounding.
72	MDATA5	I/O	Memory data.
73	MDATA9		
74	MDATA6		
75	VDD-3.3	-	3.3 V supply voltage for I/O signals.
76	MDATA8	I/O	Memory data.
77	VSS	-	Core logic and I/O signal grounding.
78	MDATA7	I/O	Memory data.
79	LDQM	O	SDRAM LDQM.
80	UDQM	O	SDRAM UDQM.
81	VDD-3.3	-	3.3 V supply voltage for I/O signals.
82	$\overline{\text{MWE}}$	O	SDRAM write enable. The decoder expresses Active Low to request write operation of the SDRAM array.
83	VSS	-	Core logic and I/O signal grounding.
84	SD-CLK	O	SDRAM system clock.
85	$\overline{\text{SD-CAS}}$	O	Active Low, SDRAM column address.
86	$\overline{\text{SD-RAS}}$	O	Active Low, SDRAM row address.
87	VDD-3.3	-	3.3 V supply voltage for I/O signals.
88	$\overline{\text{SD-CS1}}$	O	Active Low SDRAM bank selection.
89	VSS	-	Core logic and I/O signal grounding.
90	SD-CS0	O	Active Low SDRAM bank selection.
91	VDD-2.5	-	2.5 V supply voltage for the core logic.
92	NC	O	No connection.
93	VSS	-	Core logic and I/O signal grounding.
94	NC	O	No connection.
95	VDD-3.3	-	3.3 V supply voltage for I/O signals.
96	MADDR9	O	Memory address.
97	VSS	-	Core logic and I/O signal grounding.
98	MADDR11	O	Memory address.

ZIVA3-PEO (3/5)

Pin No.	Symbol	I/O	Function
99	MADDR8	O	Memory address.
100	MADDR10		
101	VDD-3.3	-	3.3 V supply voltage for I/O signals.
102	MADDR7	O	Memory address.
103	VSS	-	Core logic and I/O signal grounding.
104	MADDR0	O	Memory address.
105	MADDR6		
106	MADDR1		
107	VDD-3.3	-	3.3 V supply voltage for I/O signals.
108	MADDR5	O	Memory address.
109	VSS	-	Core logic and I/O signal grounding.
110	MADDR2	O	Memory address.
111	MADDR4		
112	MADDR3		
113	VDD-3.3	-	3.3 V supply voltage for I/O signals.
114	NC	O	No connection.
115	VSS	-	Core logic and I/O signal grounding.
116	NC	O	No connection.
117	VDD-2.5	-	2.5 V supply voltage for the core logic.
118	NC	O	No connection.
119	VSS	-	Core logic and I/O signal grounding.
120	NC	O	No connection.
121			
122			
123	VDD-3.3	-	3.3 V supply voltage for I/O signals.
124	NC	O	No connection.
125	VSS	-	Core logic and I/O signal grounding.
126	NC	O	No connection.
127			
128	RESERVED	O	The signal for opening the drain should be pulled up from 4.7 V to 3.3 V.
129	PIO2	I/O	Programmable I/O pin. Enters input mode after resetting.
130	NC	O	No connection.
131	RESERVED	I	Coupled with VSS or VDD-3.3.
132			
133	PIO3	I/O	Programmable I/O pin, which enters input mode after resetting
134	VDD-3.3	-	3.3 V supply voltage for I/O signals.
135	RESERVED	I	Coupled with VSS or VDD-3.3.
136	VSS	-	Core logic and I/O signal grounding.
137	RESERVED	I	Coupled with VSS or VDD-3.3.
138	PIO4	I/O	Programmable I/O pin, which enters input mode after resetting.
139	RESERVED	I	Coupled with VSS or VDD-3.3.
140			
141	PIO5	I/O	Programmable I/O pin, which enters input mode after resetting.
142	VDATA0	O	Video data bus for byte-serial CbYCrY data in sync with VCLK. In power up, the decoder does not drive VDATA. In boot-up, the decoder uses the configuration parameters for drive or tri-state VDATA.
143	VDATA1		
144	VDD-2.5	-	2.5 V supply voltage for the core logic.
145	VDATA2	O	Video data bus for byte-serial CbYCrY data in sync with VCLK. In power up, the decoder does not drive VDATA. In boot-up, the decoder uses the configuration parameters for drive or tri-state VDATA.
146	VSS	-	Core logic and I/O signal grounding.
147	PIO6	I/O	Programmable I/O pin, which enters input mode after resetting.
148	VDATA3	O	Video data bus for byte-serial CbYCrY data in sync with VCLK. In power up, the decoder does not drive VDATA. In boot-up, the decoder uses the configuration parameters for drive or tri-state VDATA.

ZIVA3-PEO (4/5)

Pin No.	Symbol	I/O	Function
149	VDD-3.3	-	3.3 V supply voltage for I/O signals.
150	VDATA4	O	Video data bus for byte-serial CbYCrY data. In power up, the decoder does not drive VDATA. In boot-up, the decoder uses the operation configuration parameters or tri-state VDATA.
151	VSS	-	Core logic and I/O signal grounding.
152	VDATA5	O	Video data bus for byte-serial CbYCrY data. In power up, the decoder does not drive VDATA. In boot-up, the decoder uses the operation configuration parameters or tri-state VDATA.
153	PIO7	I/O	Programmable I/O pin, which enters input mode after resetting.
154	VDATA6	O	Video data bus for byte-serial CbYCrY data. In power up, the decoder does not drive VDATA. In boot-up, the decoder uses the operation configuration parameters or tri-state VDATA.
155	VDATA7		
156	PIO8	I/O	Programmable I/O pin, which enters input mode after resetting.
157	$\overline{\text{HSYNC}}$	I/O	Horizontal sync. After the negative-going edge of $\overline{\text{VSYNC}}$, the decoder starts pixel data output for the new horizontal line.
158	$\overline{\text{VSYNC}}$	I/O	Vertical sync, which is bi-directional. After the negative-going edge of $\overline{\text{VSYNC}}$, the decoder outputs the highest border of the new field for the first $\overline{\text{SYNC}}$. $\overline{\text{VSYNC}}$ can receive either V sync or upper/lower field notification from an external source.
159	DA-IEC	O	ICE-1937 bitstream output or IEO-958 format PCM data output.
160	VDD-3.3	-	3.3 V supply voltage for I/O signals.
161	DA-DATA0	O	PCM data output in 8 channels. Serial audio sample relative to the DA-BCK clock.
162	VSS	-	Core logic and I/O signal grounding.
163	DA-DATA1	O	PCM data output in 8 channels. Serial audio sample relative to the DA-BCK clock.
164	DA-DATA2		
165	DA-DATA3		
166	DA-LRCK	O	PCM left/right clock. Identifies the channel for each audio sample. The polarity is programmable.
167	DA-BCK	O	PCM bit clock. Obtained by dividing DA-XCK by 8. DA-BCK takes a value of 48 or 32 times the sampling clock.
168	VDD-2.5	-	2.5 V supply voltage for the core logic.
169	DA-XCK	I/O	Audio master frequency clock, which is used to generate DA-BCK and DALRCK. DA-XCK takes a value of 384 or 256 times the sampling frequency.
170	VSS	-	Core logic and I/O signal grounding.
171	DAI-DATA	I	PCM input data with 2 channels. Serial audio sample relative to the DA-BCK clock.
172	DAI-LRCK	I	PCM input left/right clock.
173	DAI-BCK	I	PCM input bit clock.
174	PIO9	I/O	Programmable I/O pin, which enters input mode after resetting.
175	CLKSEL	I	Input selection: Internal = VDD. External = VSS.
176	A-VDD	-	3.3 V analog supply voltage.
177	VCLK	I	Video clock. Data is recorded at input.
178	SYSCLK	I	System clock. The decoder requires an external 27 MHz TTL oscillator. Same drive frequency as the VCK of 27 MHz.
179	A-VSS	-	Analog grounding of the PLL.
180	DVD-DATA0 /CD-DATA	I	Serial CD data. This pin is also used as a DVD compression data pin DVD-DATA0.
181	VDD-3.3	-	3.3 V supply voltage for I/O signals.
182	DVD-DATA1 /CD-LRCK	I	16-bit word sync with programmable polarity for the decoder (right channel High). This pin is also used as a DVD compression data pin DVD-DATA1.
183	VSS	-	Core logic and I/O signal grounding.
184	DVD-DATA2 /CD-BCK	I	CD bit clock. The decoder accepts multiple BCK rates. This pin is also used as a DVD compression data pin DVD-DATA2.
185	DVD-DATA3 /CD-C2PO	I	Performs High expression by indicating the damaged byte. The decoder holds the effective pixels in the last image until the next effective image is decoded. DVD compression data pin DVD-DATA3.

ZIVA3-PEO (5/5)

Pin No.	Symbol	I/O	Function
186 187 188 189	DVD-DATA7 /CDG-SCLK DVD-DATA6 /CDG-SOS1 DVD-DATA5 /CDG-VFSY DVD-DATA4 /CDG-SDATA	I	DVD parallel compression data from the DVD DSP. When the DVD DSP transmits a 32-bit word, it should first describe the WSB. CDG-SDTA: CD+G (subcode) data, which indicates a serial subcode data input. CDG-VSFY: CD+G (subcode) frame sync, which indicates the start of a frame or a composite sync input. CDG-SOS1: CD+G (subcode) block sync, which indicates a block start sync input. CDG-SCLK: CD+G (subcode) clock, which indicates the input or output of the subcode data clock.
190	PIO10	I/O	Programmable I/O pin, which enters the input mode after resetting.
191	VREQUEST	O	Video request. The decoder expresses VREQUEST to indicate that the video input buffer has available space. The polarity is programmable.
192	VSTROBE	I	Video strobe, which is a programmable, dual-mode pulse and either async or sync. In the async mode, the external source sends VSTROBE to indicate that it is ready for data transfer. In the sync mode, the signal becomes the VSTROBE clock data.
193	VDD-3.3	-	3.3 V supply voltage for I/O signals.
194	NC	O	No connection.
195	VSS	-	Core logic and I/O signal grounding.
196	V-DACK	I	Video data acknowledgement in the case of the sync mode. Expressed when the DVD data is valid. The polarity is programmable.
197	VDD-2.5	-	2.5 V supply voltage for the core logic.
198	RESERVED	I	Coupled with VSS or VDD-3.3.
199	VSS	-	Core logic and I/O signal grounding.
200	ERROR	I	Input data error. If the ERROR signal from the DSP is unusable, grounding should be performed.
201	HOST8SEL	I	Permanently coupled with VDD-3.3.
202 203 204	HADDR0 HADDR1 HADDR2	I	Host address bus. This 3-bit address bus selects one of the six hosts interface registers.
205	DTACKSEL	I	Coupled with High to select the $\overline{\text{WAIT}}$ signal or with Low to select the $\overline{\text{DTACK}}$ signal. (Motorola 68K mode)
206	$\overline{\text{CS}}$	I	Host chip selection. The host expresses CS to select the decoder for use in read/write. The read or write operation starts at the negative-going edge of this signal.
207	R/$\overline{\text{W}}$	I	Performs strobe read/write in the M mode and strobe write in the I mode. The host expresses R/$\overline{\text{W}}$ LOW to select write or LOW to select read.
208	$\overline{\text{RD}}$	I	Performs strobe read in the I mode. Should be kept HIGH in the M mode.

JVC

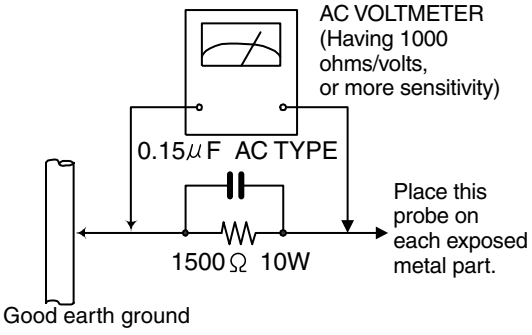
VICTOR COMPANY OF JAPAN, LIMITED
AUDIO & COMMUNICATION BUSINESS DIVISION
PERSONAL & MOBILE NETWORK B.U. 10-1,1Chome,Ohwatari-machi,maebashi-city,371-8543,Japan

No.20944

Printed in Japan
200104(S)

Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer`s warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to eachexposed metal part, particularly any exposed metal part having a return path to the chassis, and meausre the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. voltage measured Any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

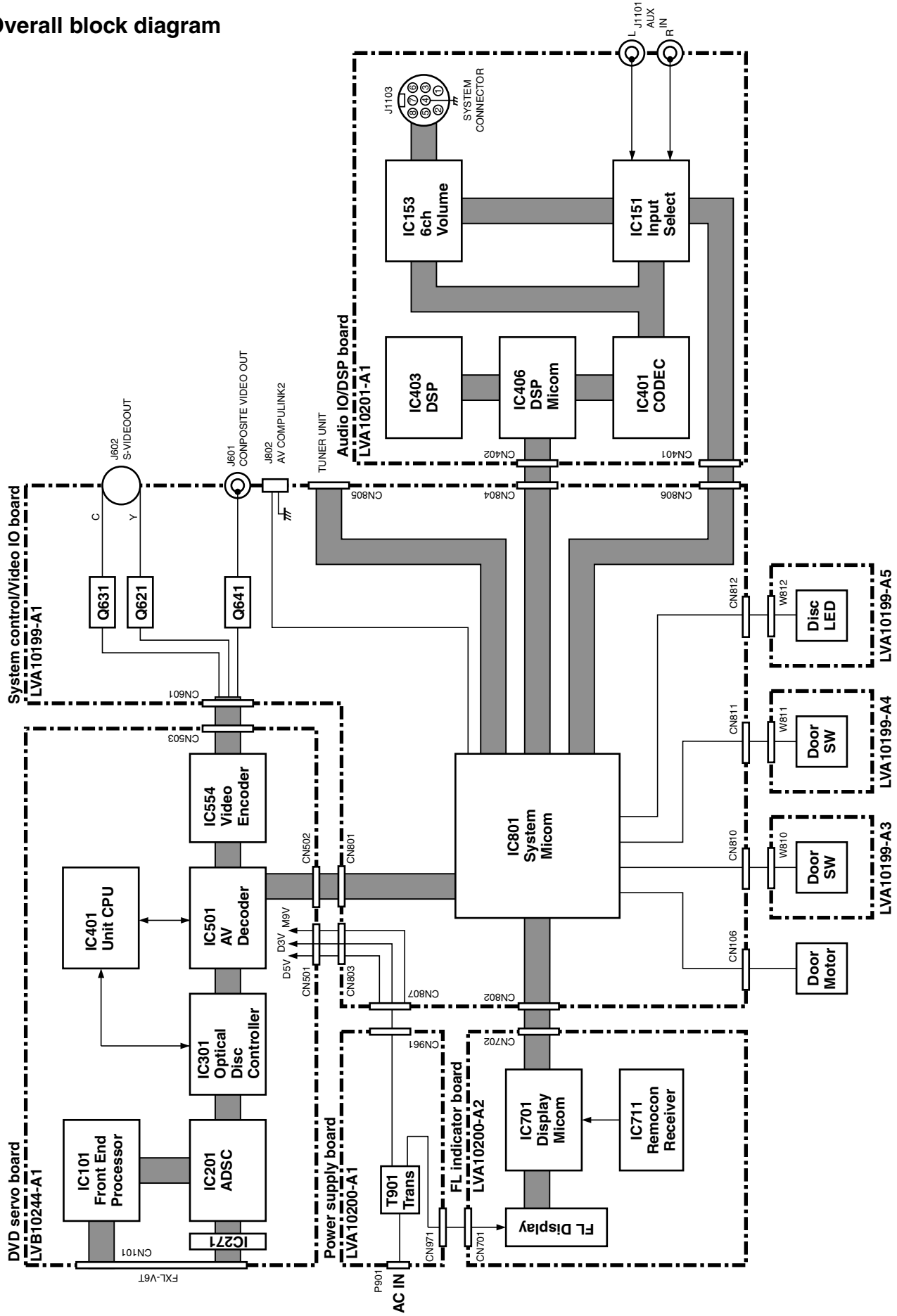
⚠ CAUTION

Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.

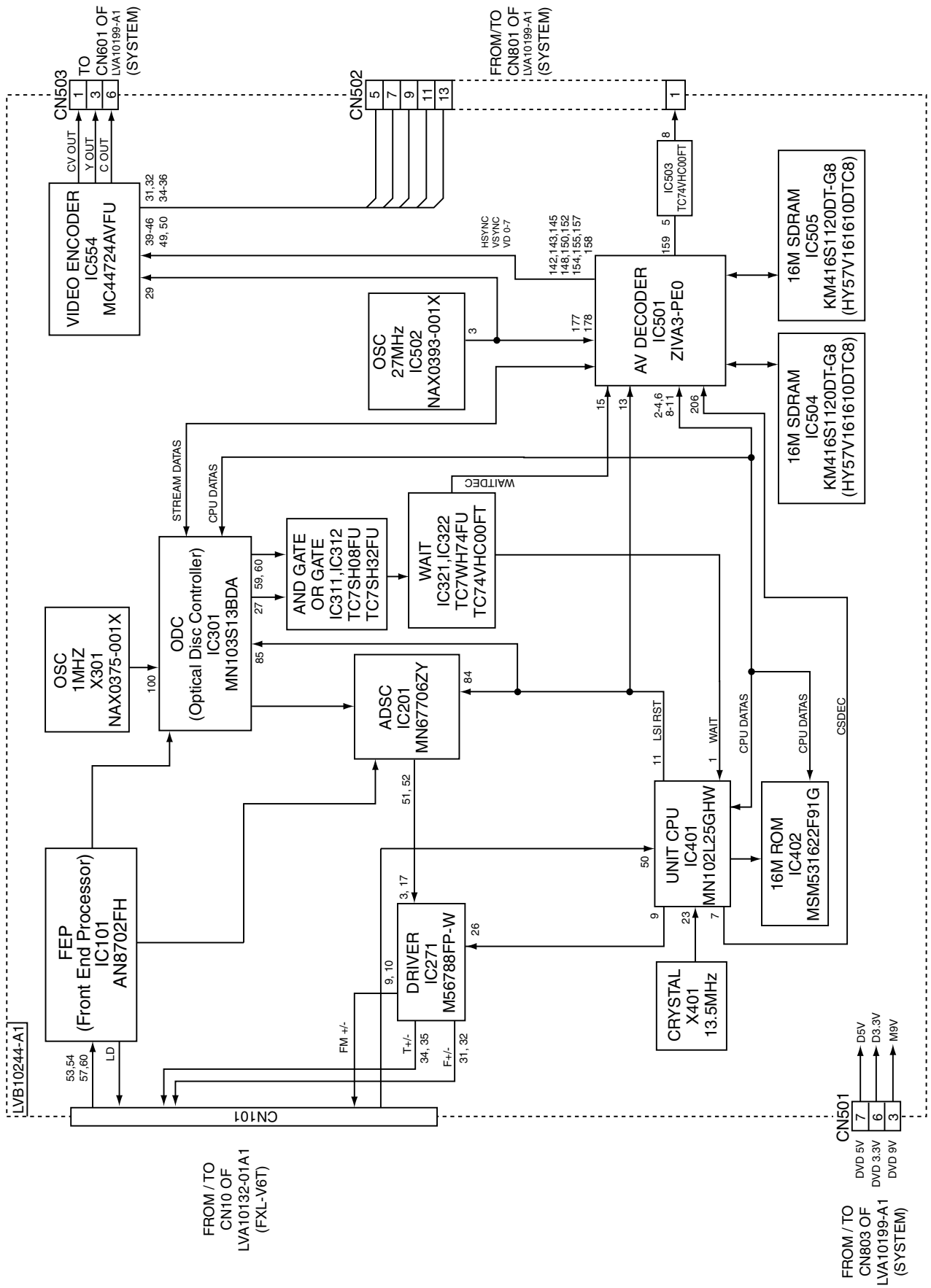
In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (▬), diode (▮) and ICP (●) or identified by the "⚠" mark nearby are critical for safety.
When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer. (Except the JC version)

Block diagrams

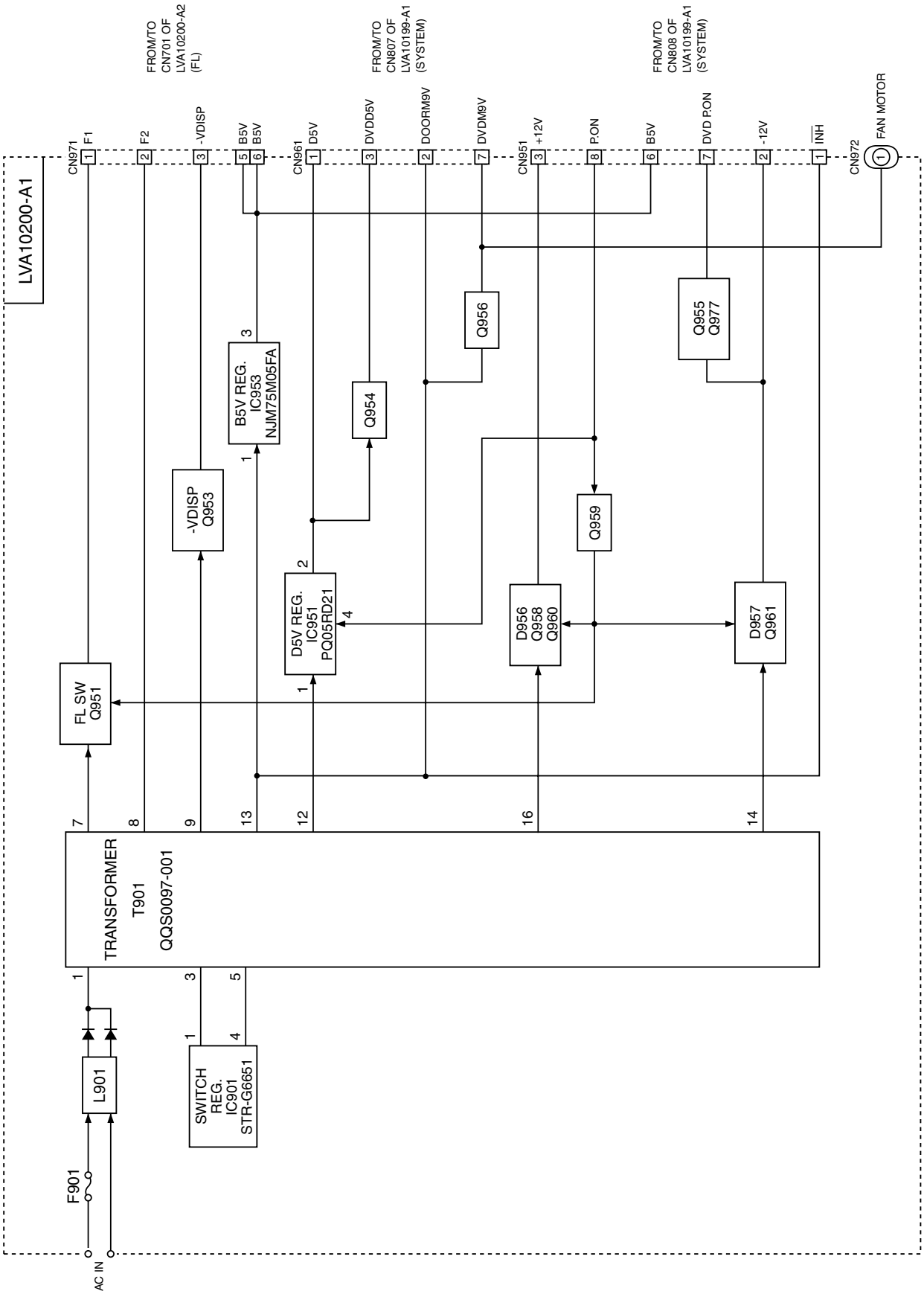
■ Overall block diagram



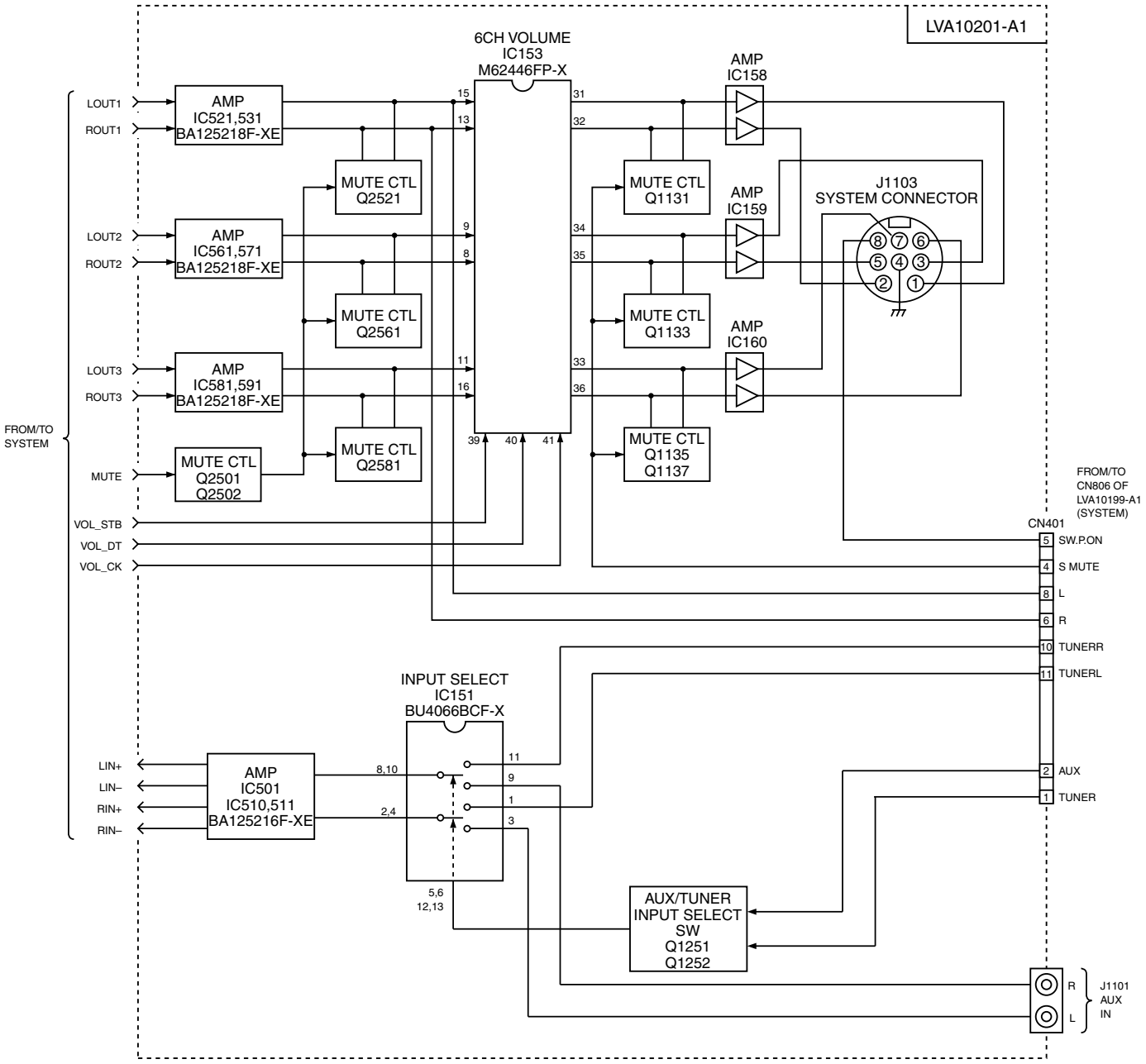
■ Overall block diagram



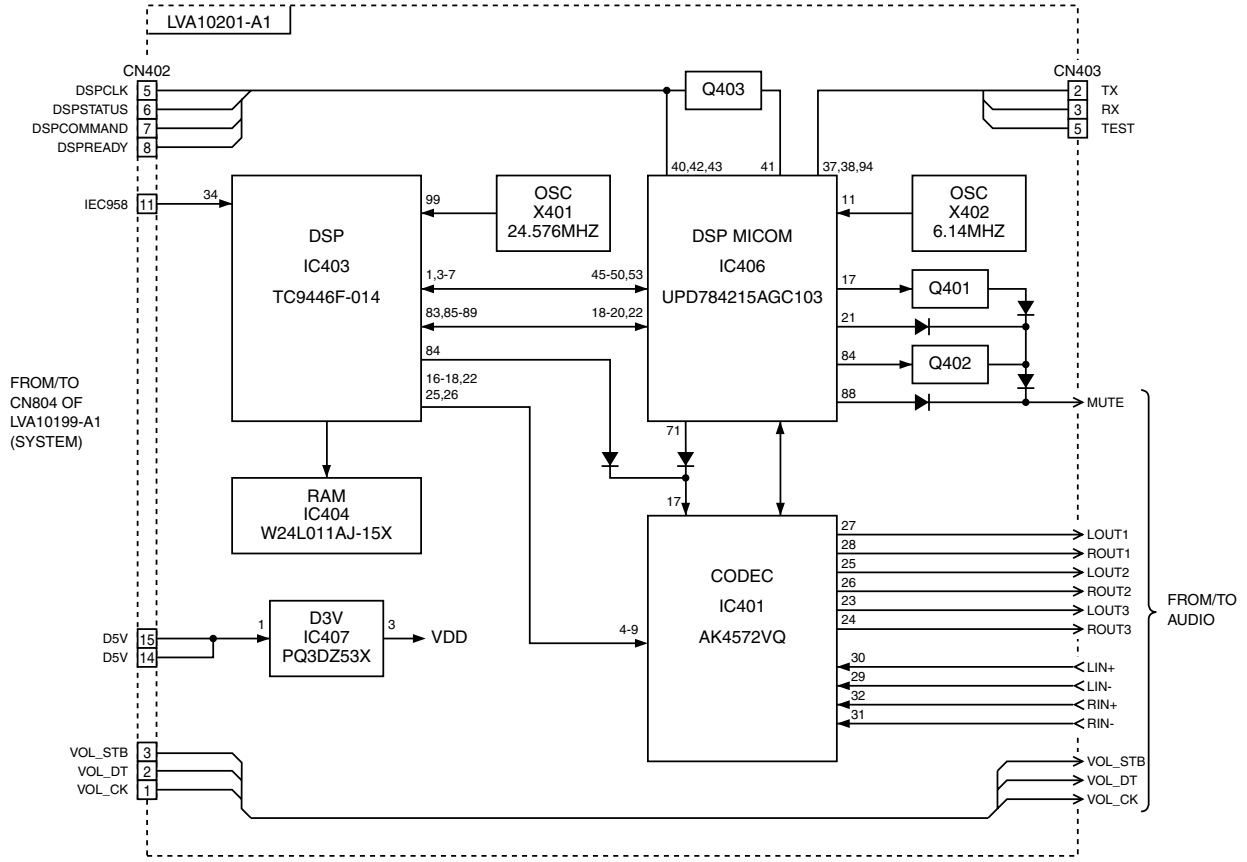
■ Block diagram (power supply section)



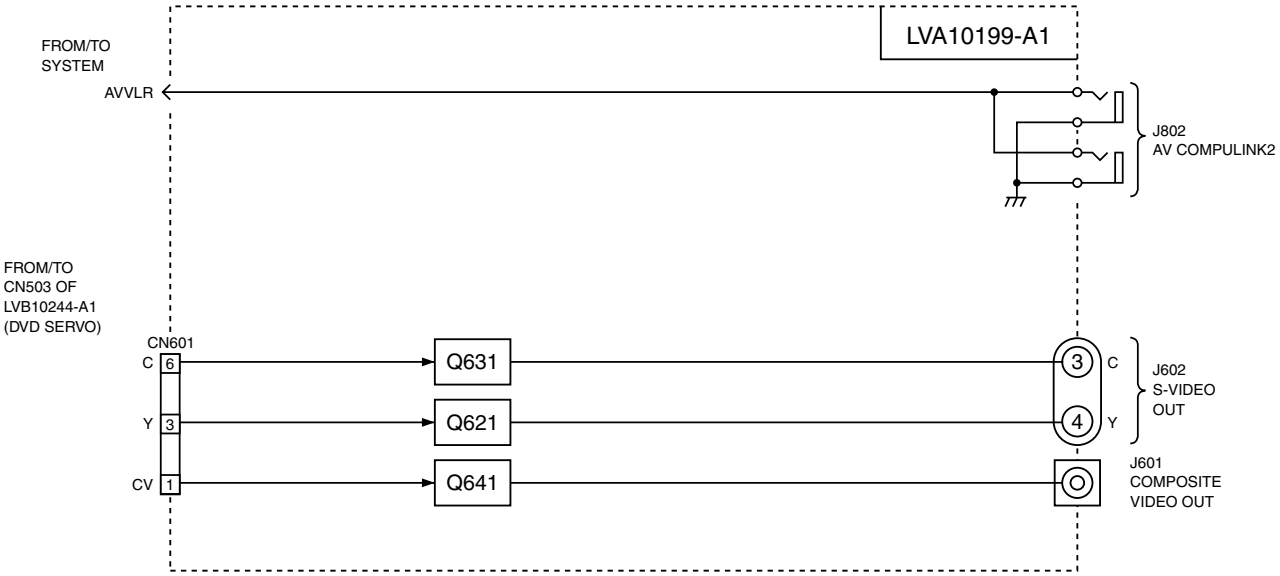
■ Block diagram (audio input/output section)



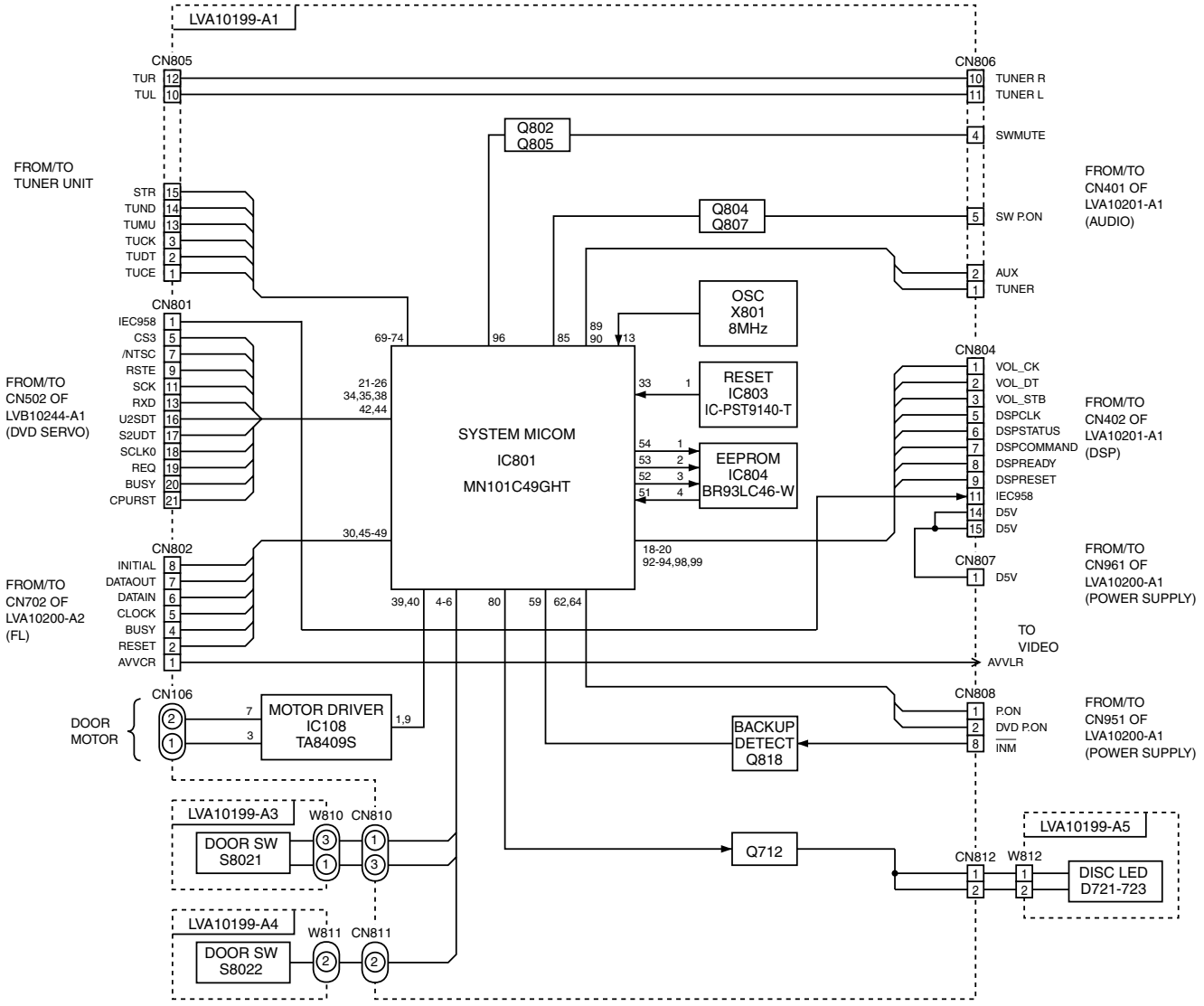
■Block diagram (DSP section)



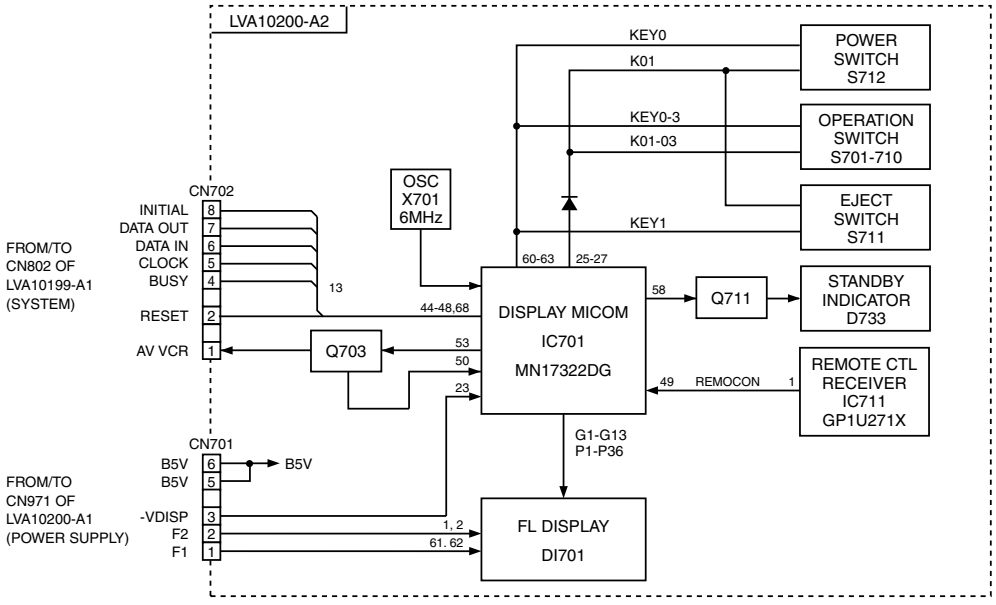
■Block diagram (video input/output section)



■ Block diagram (system control section)

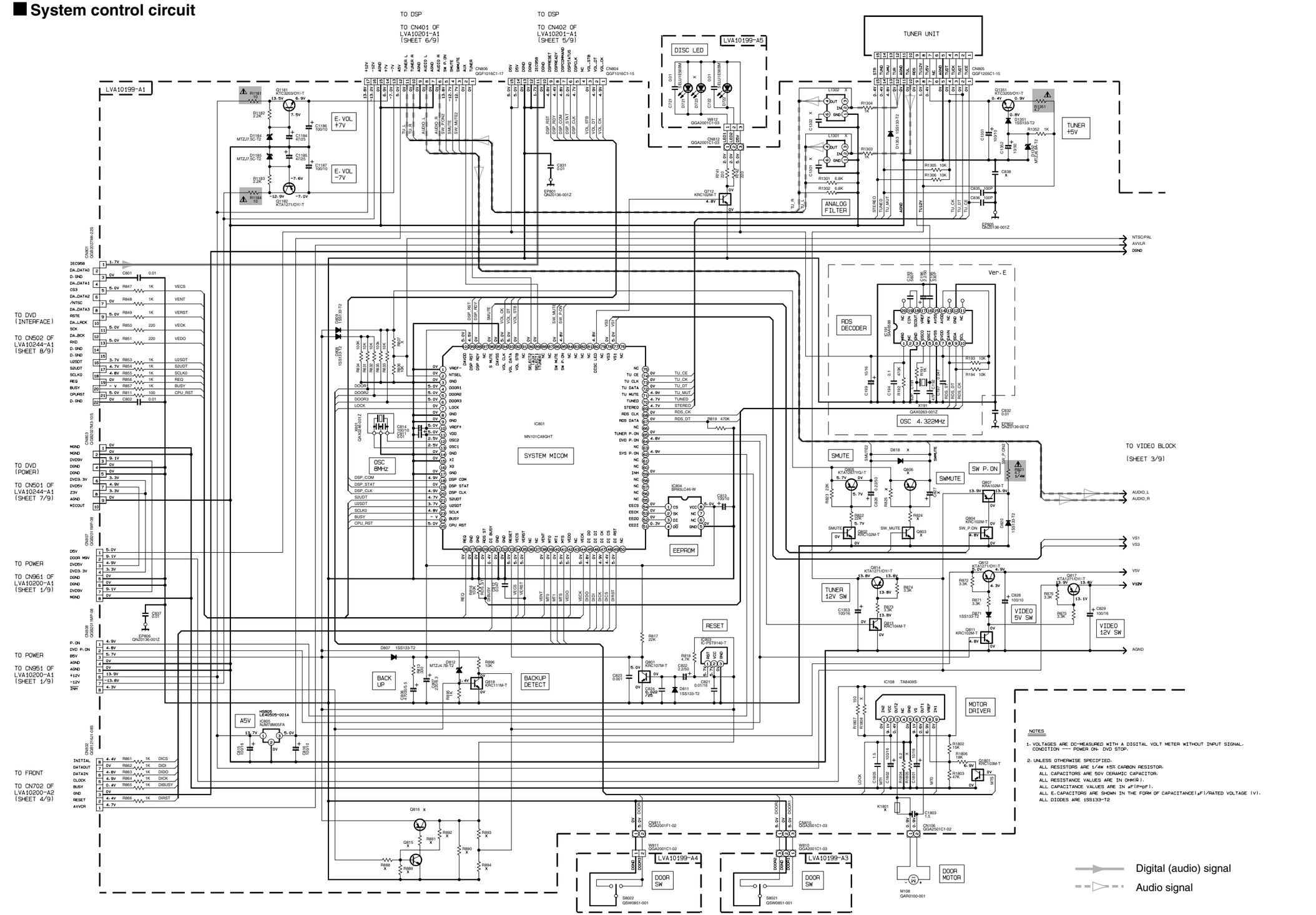


■ Block diagram (FL section)



Standerd schematic diagrams

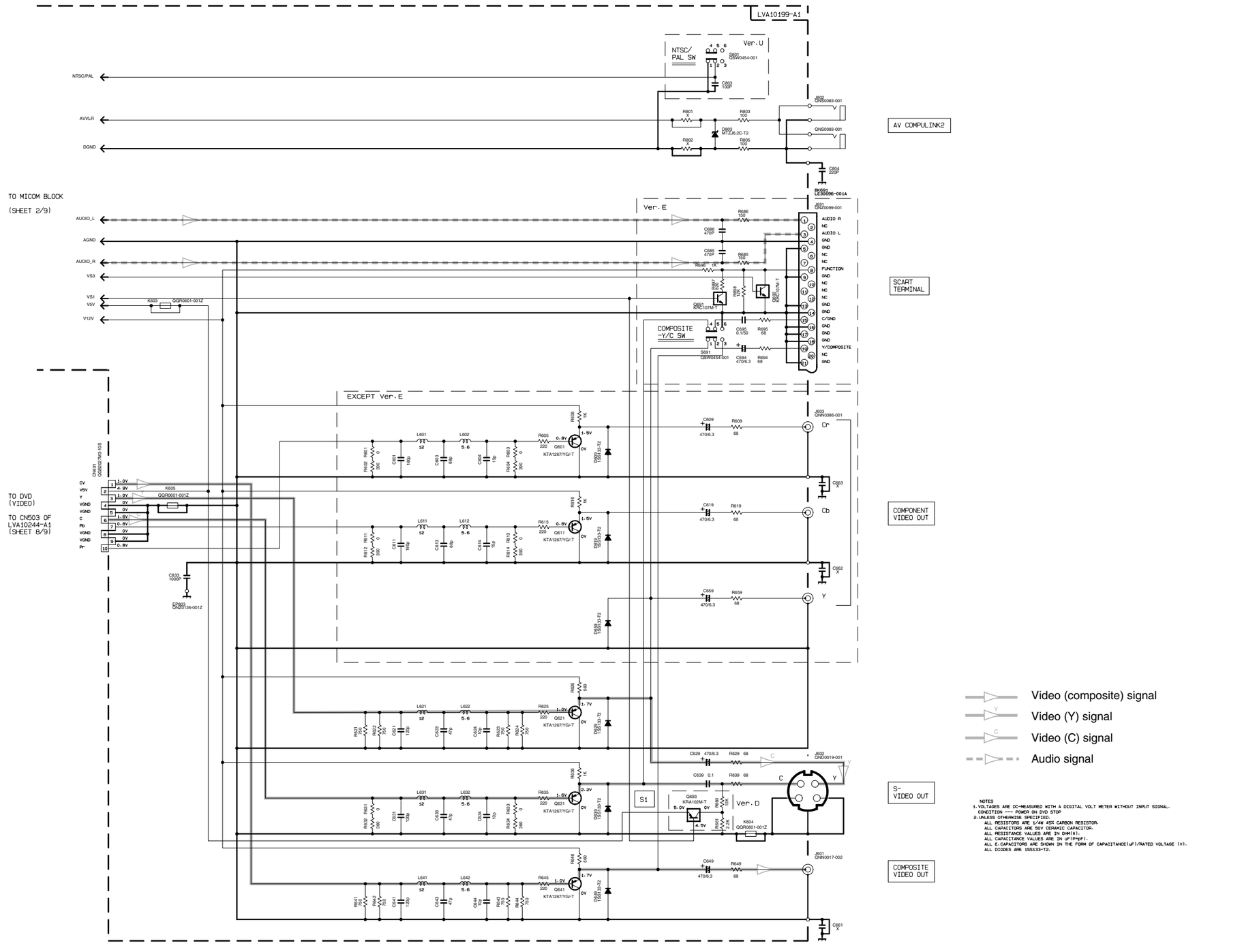
■ System control circuit



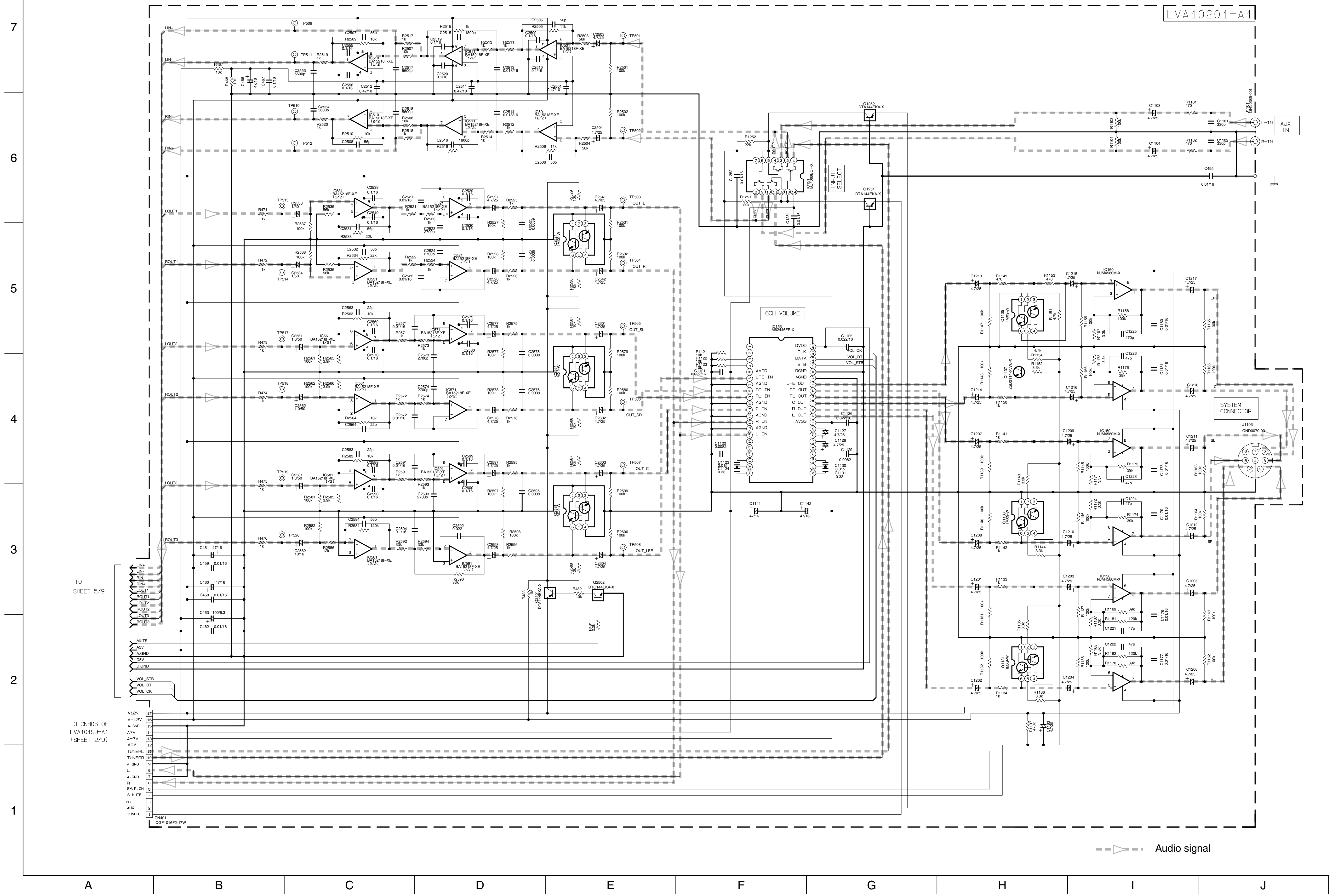
NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL.
   CONDITION ---- POWER ON- DVD STOP.
2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS ARE 1/4W ±5% CARBON RESISTOR.
   ALL CAPACITORS ARE 50V CERAMIC CAPACITOR.
   ALL RESISTANCE VALUES ARE IN OHM(Ω).
   ALL CAPACITANCE VALUES ARE IN μF(P=pF).
   ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE (V).
   ALL DIODES ARE 1SS133-T2

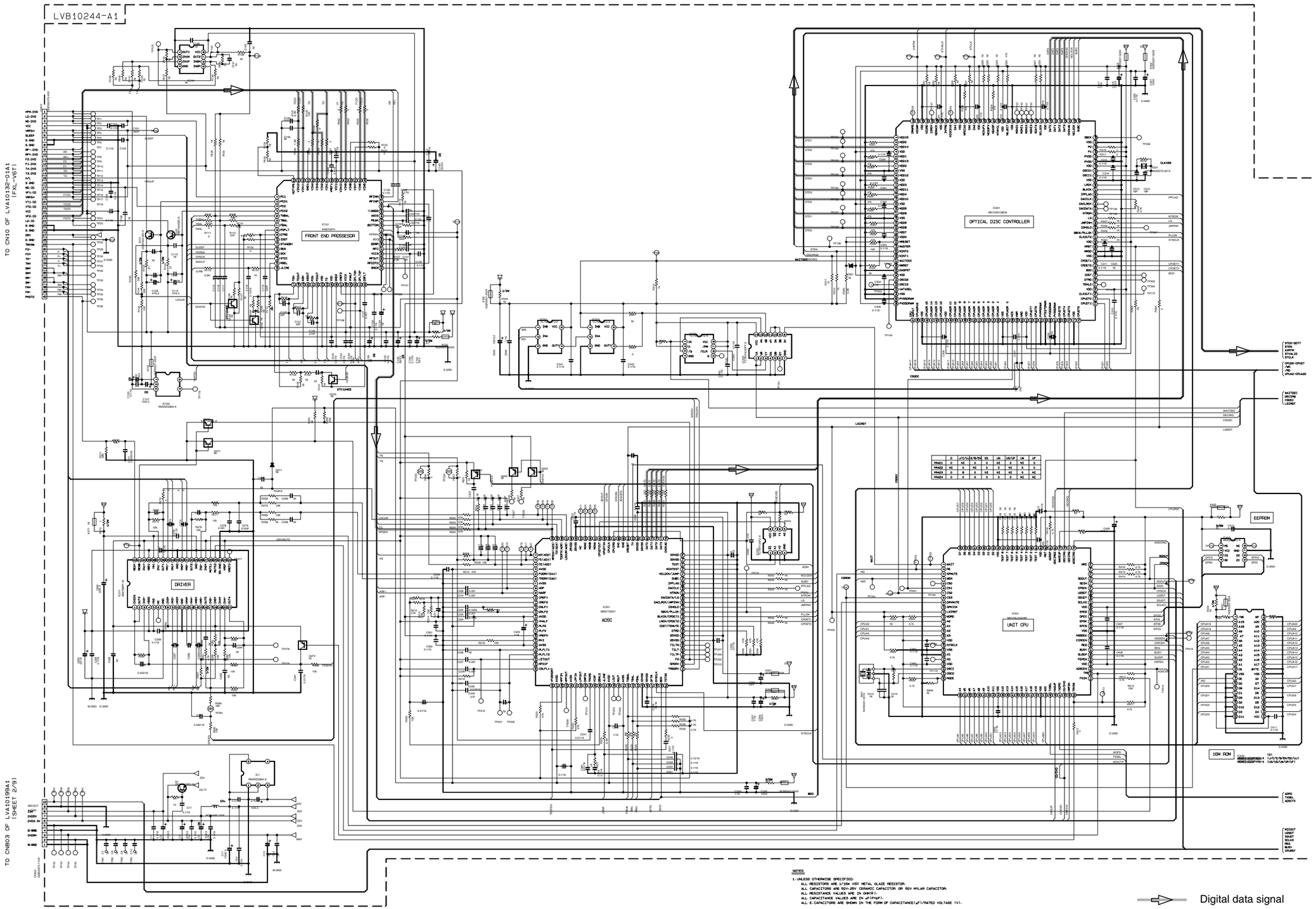
■ Video input/output circuit



Audio input/output circuit

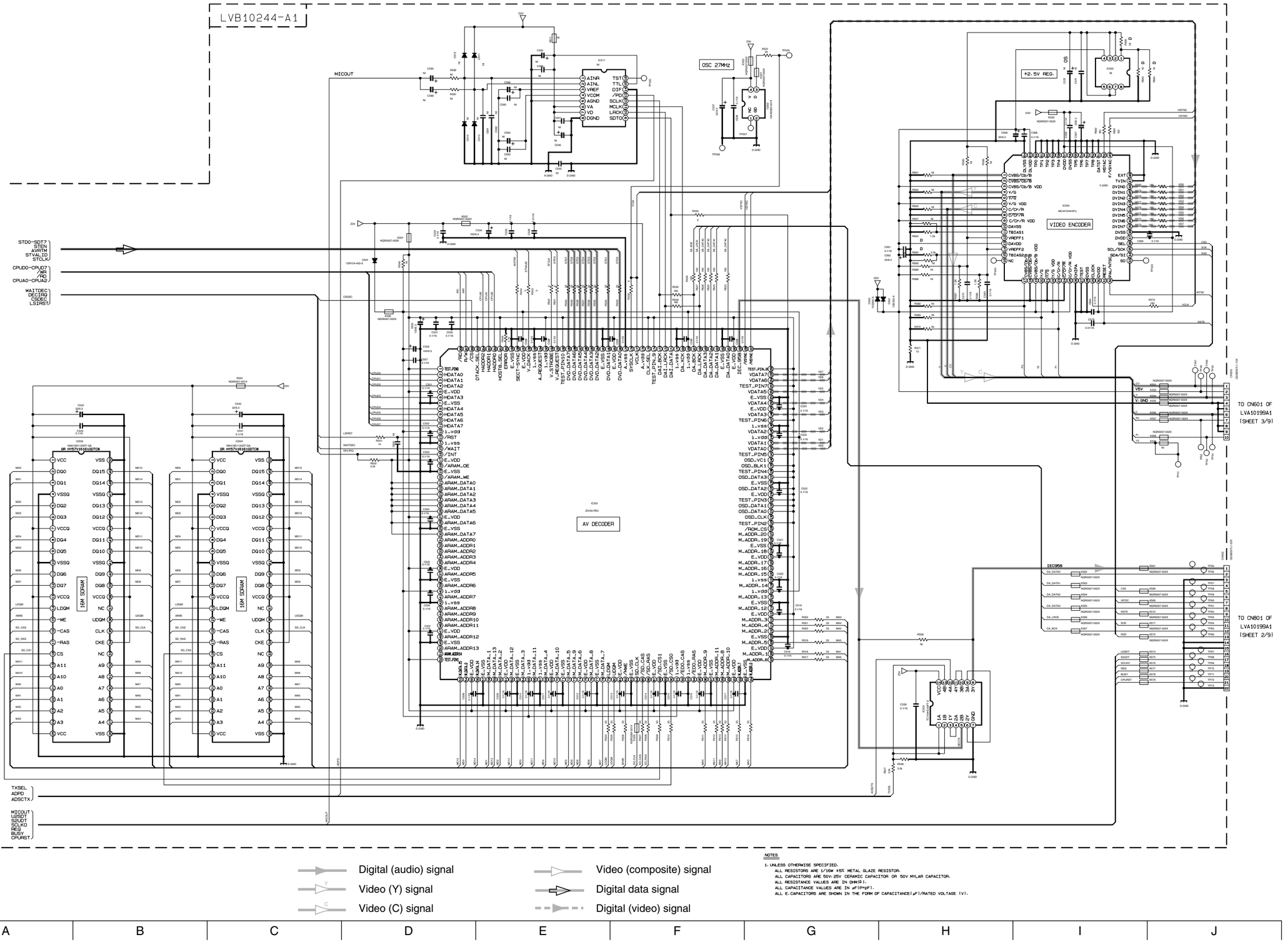


■DVD servo circuit 1/2



NOTES
1: UNLESS OTHERWISE SPECIFIED.
ALL RESISTORS ARE 1/10W ±5% METAL GLAZE RESISTOR.
ALL CAPACITORS ARE 50V~25V CERAMIC CAPACITOR OR 50V MYLAR CAPACITOR.
ALL RESISTANCE VALUES ARE IN OHM(Ω).
ALL CAPACITANCE VALUES ARE IN μF(=10^6F).
ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE (V).

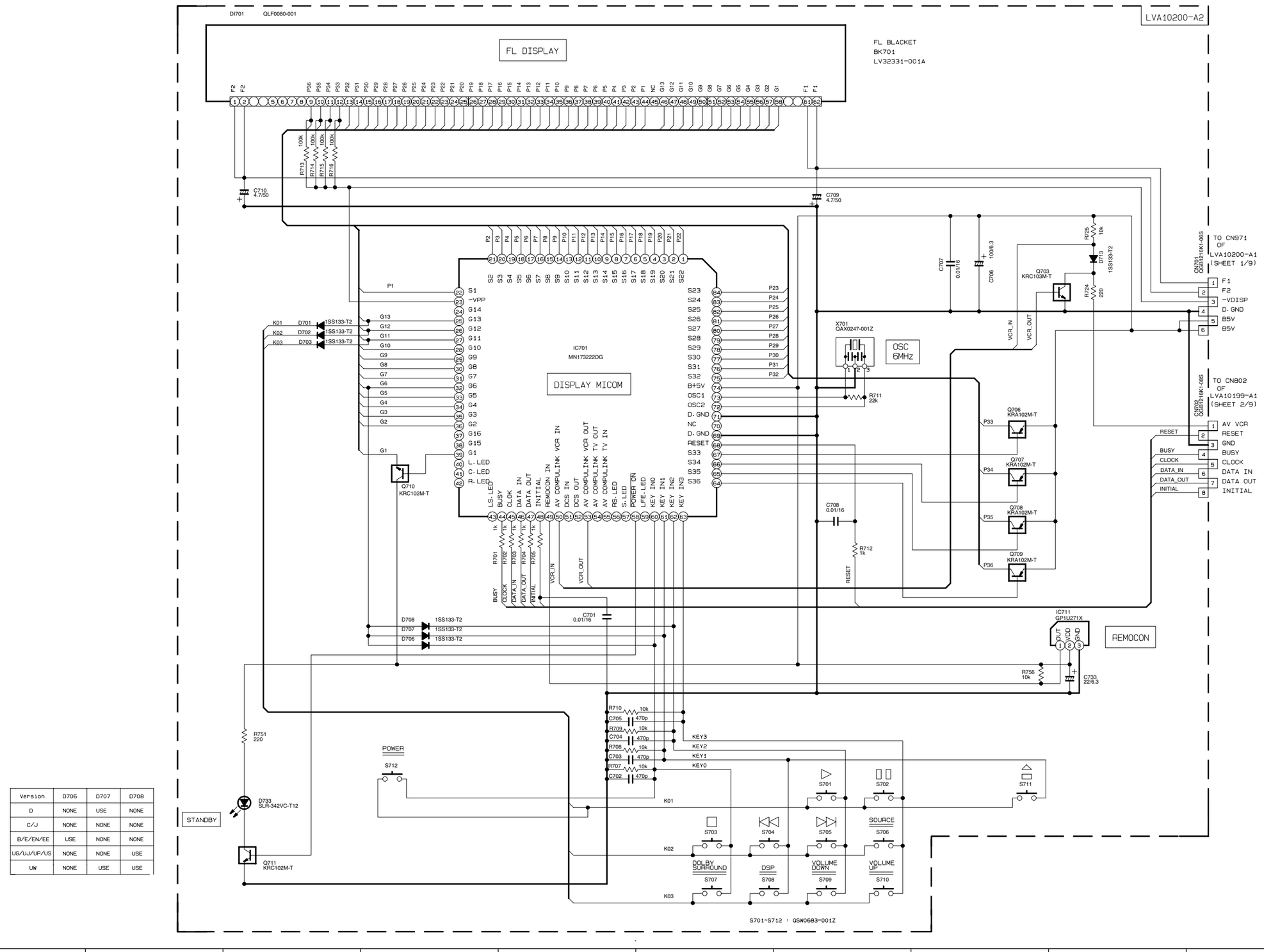
■DVD servo circuit 2/2



NOTES

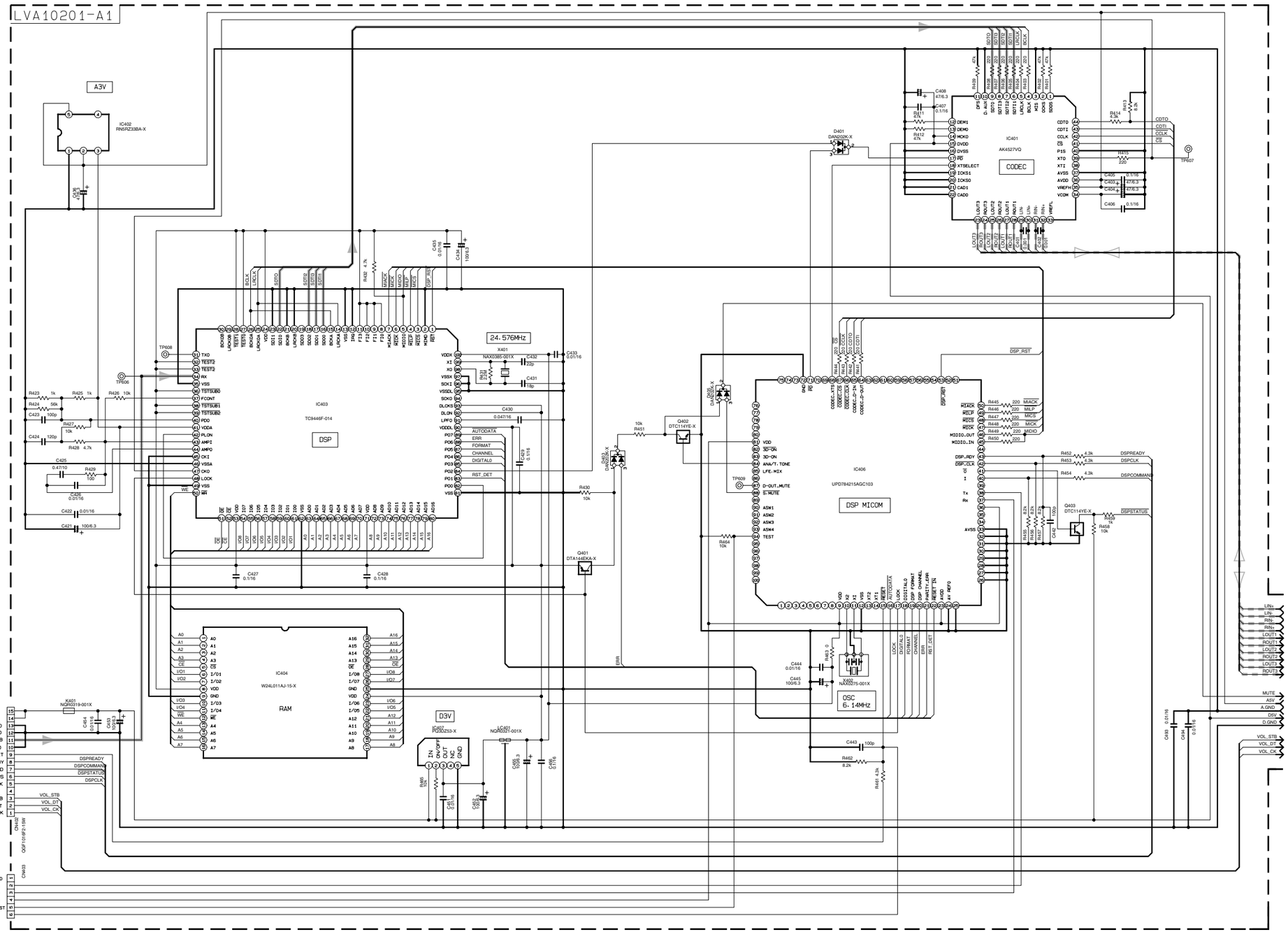
1. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS ARE 1/16W ±5% METAL GLAZE RESISTOR.
   ALL CAPACITORS ARE 50V.25V CERAMIC CAPACITOR OR 50V MYLAR CAPACITOR.
   ALL RESISTANCE VALUES ARE IN Ω(Ω).
   ALL CAPACITANCE VALUES ARE IN μF(P=pF).
   ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE (V).

■ FL circuit

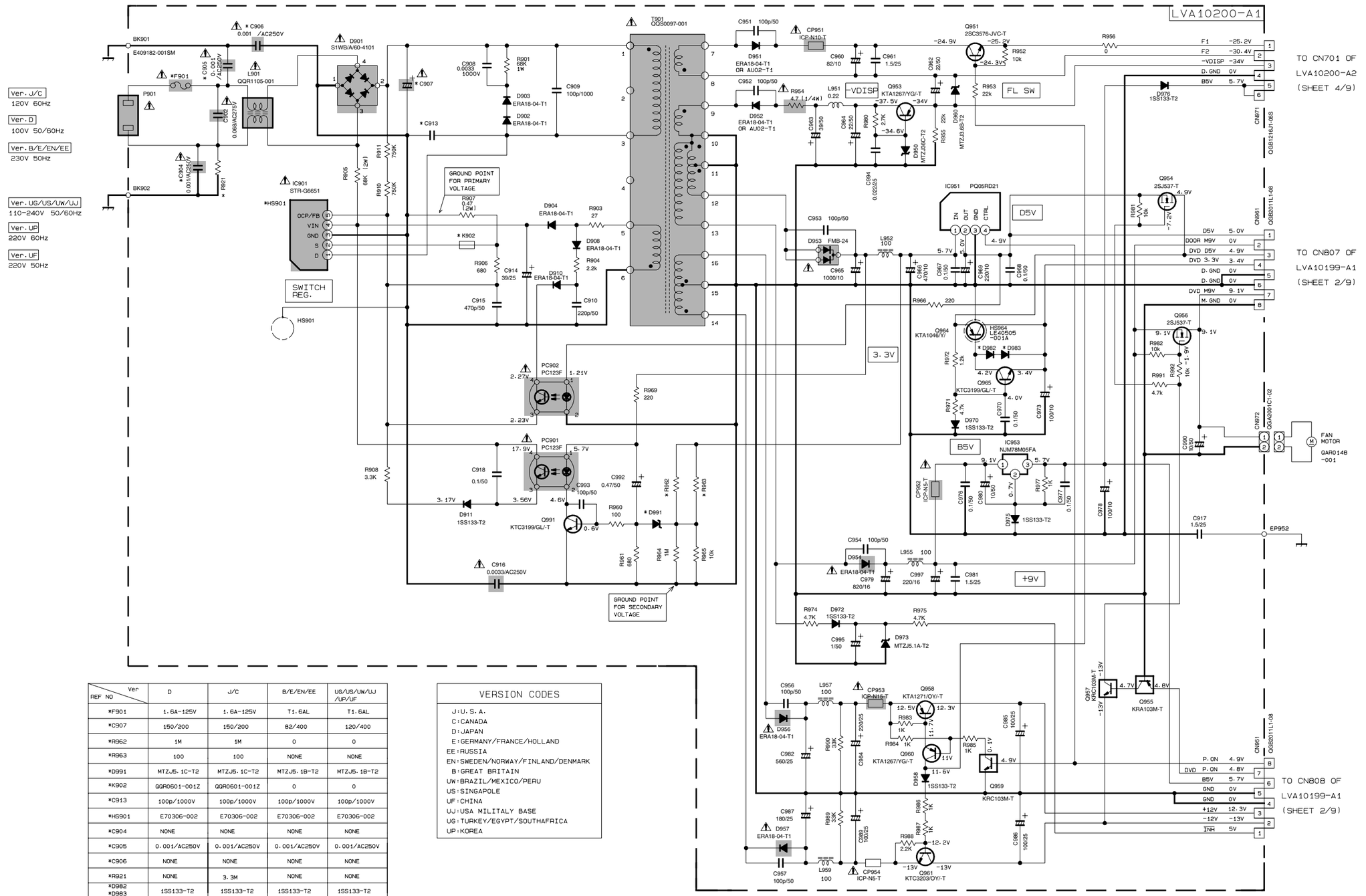


Version	D706	D707	D708
D	NONE	USE	NONE
C/J	NONE	NONE	NONE
B/E/EN/EE	USE	NONE	NONE
UG/UJ/UP/US	NONE	NONE	USE
UW	NONE	USE	USE

■ DSP circuit


LVA10201-A1
A3V
IC402
RN5RZ33BA-X
IC401
AK4527VQ
CODEC
IC403
TC9446F-014
DSP
IC404
W24L011AJ-15-X
RAM
IC406
UPD784215AGC103
DSP MICOM
24.576MHz
X401
NAX0385-001X
OSC
6.14MHz
X402
NAX0275-001X
D3V
IC407
R5Z02Z53-X
K401
NQR0319-001X
LC401
NQR0321-001X
CN403
OGF101BF3-15W
TO CN804 OF LVA10199-A1 (SHEET 2/9)
TO SHEET 6/9
Digital (audio) signal
Audio signal

■ Power supply circuit



REF NO \ Ver	D	J/C	B/E/EN/EE	UG/US/UW/UJ /UP/UF
*F901	1.6A-125V	1.6A-125V	T1.6AL	T1.6AL
*C907	150/200	150/200	82/400	120/400
*R962	1M	1M	0	0
*R963	100	100	NONE	NONE
*D991	MTZJ5.1C-T2	MTZJ5.1C-T2	MTZJ5.1B-T2	MTZJ5.1B-T2
*K902	QQR0601-001Z	QQR0601-001Z	0	0
*C913	100p/1000V	100p/1000V	100p/1000V	100p/1000V
*HS901	E70306-002	E70306-002	E70306-002	E70306-002
*C904	NONE	NONE	NONE	NONE
*C905	0.001/AC250V	0.001/AC250V	0.001/AC250V	0.001/AC250V
*C906	NONE	NONE	NONE	NONE
*R921	NONE	3.3M	NONE	NONE
*D982 *D983	1SS133-T2	1SS133-T2	1SS133-T2	1SS133-T2
P901	QNC0006-001	QNC0046-001	QNC0006-001	QNC0006-001

VERSION CODES

J : U.S.A.
C : CANADA
D : JAPAN
E : GERMANY/FRANCE/HOLLAND
EE : RUSSIA
EN : SWEDEN/NORWAY/FINLAND/DENMARK
B : GREAT BRITAIN
UW : BRAZIL/MEXICO/PERU
US : SINGAPOLE
UF : CHINA
UJ : USA MILITALY BASE
UG : TURKEY/EGYPT/SOUTHAFRICA
UP : KOREA

⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

■ Voltage value table

IC102

NO	DC(V)
1	0V
2	5.0V
3	0V
4	0V
5	0V

IC101

NO	DC(V)	NO	DC(V)	NO	DC(V)	NO	DC(V)
1	0V	17	1.7V	33	0V	49	2.2V
2	4.2V	18	1.7V	34	1.3V	50	2.2V
3	0V	19	1.7V	35	2.4V	51	2.2V
4	4.3V	20	1.7V	36	3.3V	52	2.2V
5	1.7V	21	1.7V	37	1.9V	53	2.2V
6	1.7V	22	1.7V	38	2.4V	54	2.2V
7	1.7V	23	0V	39	0V	55	4.8V
8	4.1V	24	1.7V	40	0V	56	2.2V
9	3.3V	25	3.3V	41	1.7V	57	2.2V
10	0V	26	0V	42	1.5V	58	2.2V
11	4.9V	27	2.1V	43	1.6V	59	2.2V
12	4.9V	28	4.8V	44	1.1V	60	2.2V
13	4.9V	29	4.8V	45	2.5V	61	0V
14	4.9V	30	2.1V	46	2.1V	62	2.2V
15	1.2V	31	2.1V	47	2.1V	63	2.2V
16	1.7V	32	2.0V	48	2.1V	64	1.6V

IC311

NO	DC(V)
1	5.0V
2	4.6V
3	0V
4	4.7V
5	5.0V

IC312

NO	DC(V)
1	5.0V
2	4.7V
3	0V
4	5.0V
5	5.0V

IC321

NO	DC(V)
1	5.0V
2	5.0V
3	5.0V
4	0V
5	0V
6	0V
7	5.0V
8	5.0V

IC322

NO	DC(V)
1	5.0V
2	5.0V
3	0V
4	0V
5	0V
6	5.0V
7	0V
8	5.0V
9	0V
10	0V
11	0V
12	5.0V
13	5.0V
14	5.0V

IC301

NO	DC(V)	NO	DC(V)	NO	DC(V)	NO	DC(V)
1	3.3V	37	0V	73	0.8V	109	2.5V
2	3.3V	38	0.3V	74	0.8V	110	0V
3	3.3V	39	0V	75	1.7V	111	1.7V
4	3.3V	40	4.1V	76	3.3V	112	1.1V
5	0V	41	4.3V	77	0V	113	1.1V
6	3.3V	42	4.2V	78	3.3V	114	1.1V
7	3.3V	43	1.6V	79	0V	115	1.1V
8	0V	44	2.6V	80	3.3V	116	3.3V
9	3.3V	45	3.3V	81	0V	117	3.3V
10	3.6V	46	3.6V	82	0V	118	3.3V
11	3.3V	47	3.7V	83	0V	119	0V
12	3.3V	48	3.8V	84	0V	120	0V
13	3.3V	49	3.7V	85	4.8V	121	0V
14	3.3V	50	3.8V	86	2.6V	122	0V
15	3.3V	51	1.0V	87	1.7V	123	0V
16	3.3V	52	1.0V	88	0V	124	3.3V
17	3.3V	53	3.6V	89	0V	125	2.6V
18	0V	54	3.8V	90	0V	126	1.3V
19	0V	55	1.0V	91	0V	127	0V
20	3.3V	56	0V	92	3.3V	128	1.4V
21	3.3V	57	0.7V	93	0V	129	1.1V
22	4.5V	58	4.9V	94	3.3V	130	3.3V
23	4.5V	59	4.9V	95	0V	131	1.6V
24	0V	60	4.4V	96	3.3V	132	3.3V
25	0.1V	61	3.3V	97	0V	133	0V
26	4.9V	62	1.2V	98	0V	134	0V
27	4.9V	63	2.4V	99	0V	135	3.3V
28	1.4V	64	0V	100	1.6V	136	1.3V
29	0V	65	0V	101	1.6V	137	0V
30	3.3V	66	2.6V	102	3.3V	138	3.3V
31	0V	67	0V	103	0V	139	1.3V
32	3.3V	68	1.0V	104	3.3V	140	1.0V
33	0V	69	2.1V	105	3.3V	141	1.1V
34	0V	70	1.0V	106	3.3V	142	0V
35	0V	71	0V	107	0V	143	3.3V
36	2.6V	72	2.3V	108	0V	144	3.3V

IC403

NO	DC(V)
1	4.9V
2	5.0V
3	0V
4	0V
5	0V
6	1.0V
7	0V
8	0V

IC201

NO	DC(V)	NO	DC(V)	NO	DC(V)	NO	DC(V)
1	1.7V	26	2.1V	76	1.7V	51	1.7V
2	1.7V	27	3.2V	77	1.1V	52	1.7V
3	1.7V	28	1.7V	78	1.1V	53	3.2V
4	3.2V	29	0V	79	1.1V	54	0V
5	1.7V	30	0V	80	1.1V	55	0V
6	1.7V	31	1.7V	81	0V	56	0V
7	0V	32	0V	82	3.3V	57	0V
8	1.6V	33	1.7V	83	3.3V	58	2.6V
9	1.6V	34	1.7V	84	4.8V	59	0V
10	1.5V	35	0.1V	85	4.9V	60	0V
11	1.5V	36	1.6V	86	4.9V	61	0V
12	1.7V	37	1.7V	87	3.3V	62	0V
13	1.5V	38	3.2V	88	4.9V	63	0V
14	3.2V	39	1.6V	89	4.9V	64	0V
15	1.7V	40	1.6V	90	0.5V	65	0V
16	2.7V	41	0V	91	1.7V	66	0V
17	0.2V	42	1.7V	92	2.5V	67	3.3V
18	2.2V	43	1.7V	93	3.3V	68	1.7V
19	1.5V	44	1.7V	94	0.7V	69	3.3V
20	0V	45	0V	95	0V	70	2.5V
21	1.6V	46	3.3V	96	2.6V	71	0V
22	1.6V	47	0V	97	1.8V	72	0V
23	1.5V	48	1.7V	98	1.6V	73	0V
24	1.7V	49	0V	99	1.6V	74	0V
25	1.5V	50	0.3V	100	1.7V	75	3.3V

IC401

NO	DC(V)	NO	DC(V)	NO	DC(V)	NO	DC(V)
1	5.0V	26	2.7V	51	0.6V	76	5.0V
2	5.0V	27	1.8V	52	5.0V	77	5.0V
3	5.0V	28	2.1V	53	5.0V	78	3.1V
4	5.0V	29	1.7V	54	5.0V	79	0V
5	0V	30	3.5V	55	5.0V	80	5.0V
6	5.0V	31	3.5V	56	5.0V	81	5.0V
7	5.0V	32	2.1V	57	0V	82	4.9V
8	4.4V	33	2V	58	0V	83	5.0V
9	5.0V	34	5.0V	59	5.0V	84	5.0V
10	0V	35	2.6V	60	0V	85	0V
11	4.9V	36	4.3V	61	0V	86	0V
12	5.0V	37	4V	62	0V	87	0V
13	0V	38	0V	63	0V	88	5.0V
14	0V	39	5V	64	0V	89	5.0V
15	2.1V	40	0V	65	0V	90	5.0V
16	1.9V	41	0V	66	5.0V	91	5.0V
17	5.0V	42	0V	67	4.8V	92	0V
18	2.3V	43	0V	68	3.8V	93	1.1V
19	0V	44	0V	69	4.8V	94	1.5V
20	0V	45	0V	70	5.0V	95	0V
21	5.0V	46	0V	71	0V	96	0V
22	5.0V	47	0V	72	5.0V	97	2.3V
23	2.4V	48	5V	73	5.0V	98	2.3V
24	2.4V	49	0V	74	5.0V	99	2.3V
25	5.0V	50	5.0V	75	5.0V	100	2.4V

IC402

NO	DC(V)	NO	DC(V)
1	4.9V	23	5V
2	0V	24	2.3V
3	0V	25	0V
4	3.5V	26	2.3V
5	1.7V	27	0V
6	2.1V	28	2.3V
7	1.8V	29	0V
8	2.7V	30	2.4V
9	1.9V	31	0V
10	2.1V	32	0V
11	0V	33	0V
12	4.6V	34	0V
13	0V	35	5V
14	4.2V	36	0V
15	1.1V	37	4V
16	0V	38	4.3V
17	1.5V	39	2.6V
18	0V	40	2V
19	0V	41	2.1V
20	0V	42	3.5V
21	0V	43	0V
22	0V	44	0V

IC271

NO	DC(V)	NO	DC(V)
1	0V	22	1.37V
2	0V	23	1.37V
3	0V	24	0V
4	9V	25	5.0V
5	9V	26	5.0V
6	0V	27	1.37V
7	0V	28	1.37V
8	1.37V	29	0V
9	3.9V	30	1.41V
10	3.4V	31	2.37V
11	0V	32	2.56V
12	3.4V	33	0V
13	4.5V	34	2.39V
14	5.7V	35	2.56V
15	3V	36	1.34V
16	0V	37	1.37V
17	0V	38	4.93V
18	0V	39	9V
19	0V	40	1.37V
20	1.37V	41	3.2V
21	0V	42	3V

IC202

NO	DC(V)
1	0V
2	3.3V
3	4.9V
4	0V
5	0V
6	4.9V
7	0V
8	4.9V

VOLTAGES ON SHEET 7/9

IC502

NO	DC(V)
1	3.1V
2	0V
3	1.6V
4	3.2V

IC554

NO	DC(V)	NO	DC(V)	NO	DC(V)	NO	DC(V)
1	1.3V	17	0.9V	33	0.9V	49	3.2V
2	0V	18	0V	34	1.3V	50	2.8V
3	5V	19	5V	35	2.1V	51	0V
4	1.27V	20	5V	36	1.3V	52	0V
5	0V	21	0V	37	0.6V	53	0V
6	5V	22	0.3V	38	0V	54	0V
7	2.1V	23	0V	39	1V	55	0V
8	0V	24	0V	40	1.4V	56	0V
9	5V	25	0V	41	1.2V	57	3.2V
10	0V	26	0V	42	1.6V	58	0V
11	2.8V	27	0V	43	1.2V	59	0V
12	2.8V	28	0V	44	1.2V	60	0V
13	5V	29	1.6V	45	1.2V	61	0V
14	2.7V	30	3.2V	46	1.2V	62	0V
15	0V	31	5V	47	0V	63	5.1V
16	0V	32	0V	48	0V	64	0V

IC501

NO	DC(V)	NO	DC(V)	NO	DC(V)	NO	DC(V)
1	3.1V	53	0.7V	105	0V	157	0.9V
2	1.7V	54	0.7V	106	0V	158	0.9V
3	0.7V	55	3.1V	107	3.1V	159	0V
4	2.0V	56	0.6V	108	0V	160	3.1V
5	3.1V	57	0V	109	0V	161	0V
6	1.6V	58	0.6V	110	0V	162	0V
7	0V	59	0.5V	111	0V	163	0V
8	0V	60	0.5V	112	0V	164	0V
9	2.4V	61	3.1V	113	3.1V	165	0V
10	2.9V	62	0.6V	114	0V	166	0V
11	2.6V	63	0V	115	0V	167	0V
12	2.5V	64	0.6V	116	0V	168	2.5V
13	5.0V	65	2.5V	117	2.5V	169	0.9V
14	0V	66	0.7V	118	0V	170	0V
15	5.0V	67	0V	119	0V	171	0V
16	3.1V	68	0.7V	120	0V	172	1.6V
17	3.1V	69	3.1V	121	0V	173	1.6V
18	3.1V	70	0.6V	122	0V	174	3.1V
19	0V	71	0V	123	3.1V	175	3.1V
20	3.1V	72	0.7V	124	0V	176	3.1V
21	3.1V	73	0.7V	125	0V	177	1.6V
22	3.1V	74	0.6V	126	0V	178	3.1V
23	3.1V	75	3.1V	127	0V	179	0V
24	3.1V	76	0.7V	128	0.8V	180	5.0V
25	3.1V	77	0V	129	3.1V	181	3.1V
26	3.1V	78	0.8V	130	3.1V	182	5.0V
27	3.1V	79	3.2V	131	3.1V	183	0V
28	3.1V	80	3.2V	132	3.1V	184	5.0V
29	0V	81	3.1V	133	3.1V	185	5.0V
30	3.1V	82	3.2V	134	3.1V	186	5.0V
31	0V	83	0V	135	3.1V	187	5.0V
32	0V	84	0V	136	0V	188	5.0V
33	0V	85	3.2V	137	3.1V	189	5.0V
34	0V	86	0V	138	3.1V	190	3.1V
35	3.1V	87	3.1V	139	3.1V	191	3.1V
36	3.1V	88	0V	140	0.8V	192	2.6V
37	0V	89	0V	141	3.1V	193	3.1V
38	0V	90	3.1V	142	0.9V	194	0V
39	0V	91	2.5V	143	0.9V	195	0V
40	2.5V	92	3.1V	144	2.5V	196	0V
41	3.1V	93	0V	145	0.9V	197	2.5V
42	0V	94	3.1V	146	0V	198	5.0V
43	3.1V	95	3.1V	147	3.1V	199	0V
44	0V	96	0V	148	0.9V	200	0V
45	3.1V	97	0V	149	3.1V	201	3.1V
46	3.1V	98	0V	150	0.9V	202	2.2V
47	0V	99	0V	151	0V	203	2.4V
48	3.1V	100	0V	152	0.9V	204	2.5V
49	0V	101	3.1V	153	3.1V	205	3.1V
50	3.1V	102	0V	154	0.9V	206	5.0V
51	0V	103	0V	155	0.9V	207	5.0V
52	3.1V	104	0V	156	3.1V	208	2.0V

IC505

NO	DC(V)	NO	DC(V)
1	3.2V	26	0V
2	0V	27	3.1V
3	0V	28	0V
4	0V	29	3.1V
5	0V	30	0V
6	0.3V	31	3.1V
7	3.2V	32	0V
8	0V	33	0V
9	0V	34	3.2V
10	0V	35	1.7V
11	0V	36	0V
12	0V	37	0V
13	3.2V	38	3.2V
14	0V	39	0V
15	3.1V	40	0V
16	3.1V	41	0V
17	3.1V	42	0V
18	2.3V	43	0V
19	0V	44	3.2V
20	0V	45	0V
21	0V	46	0V
22	3.1V	47	0V
23	3.1V	48	0V
24	0V	49	0V
25	3.2V	50	0V

IC504

NO	DC(V)	NO	DC(V)
1	3.2V	26	0V
2	0V	27	3.1V
3	0V	28	0V
4	0V	29	3.1V
5	0V	30	0V
6	0.3V	31	3.1V
7	3.2V	32	0V
8	0V	33	0V
9	0V	34	3.2V
10	0V	35	1.7V
11	0V	36	0V
12	0V	37	0V
13	3.2V	38	3.2V
14	0V	39	0V
15	3.1V	40	0V
16	3.1V	41	0V
17	3.1V	42	0V
18	2.3V	43	0V
19	0V	44	3.2V
20	0V	45	0V
21	0V	46	0V
22	3.1V	47	0V
23	3.1V	48	0V
24	0V	49	0V
25	3.2V	50	0V

IC503

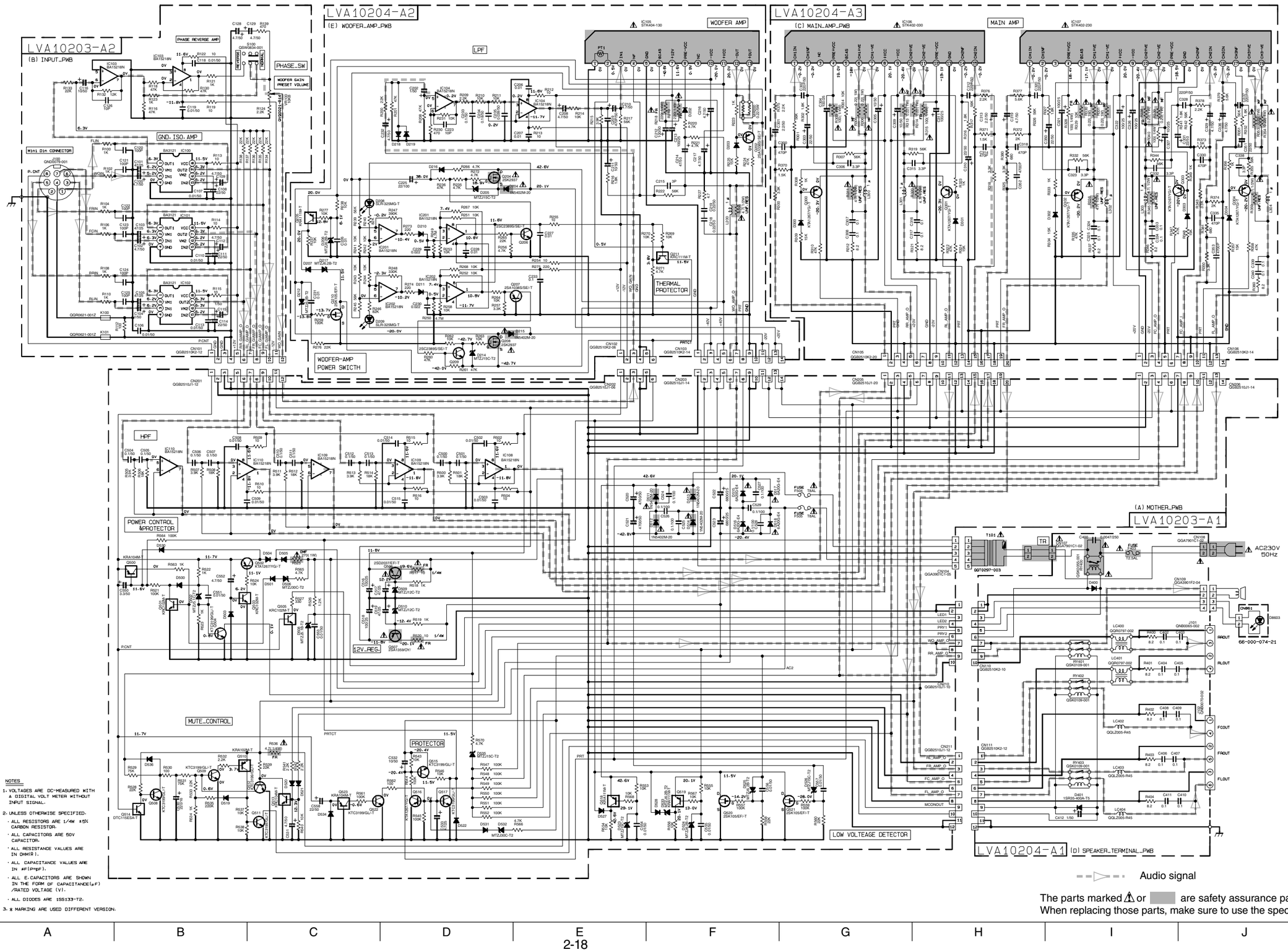
NO	DC(V)
1	0V
2	0V
3	3.2V
4	3.2V
5	1.6V
6	1.6V
7	0V
8	1.6V
9	1.6V
10	3.2V
11	3.2V
12	3.2V
13	0V
14	3.2V

VOLTAGES ON SHEET 8/9

NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER

■ Powered subwoofer circuit (SP-PWA9)



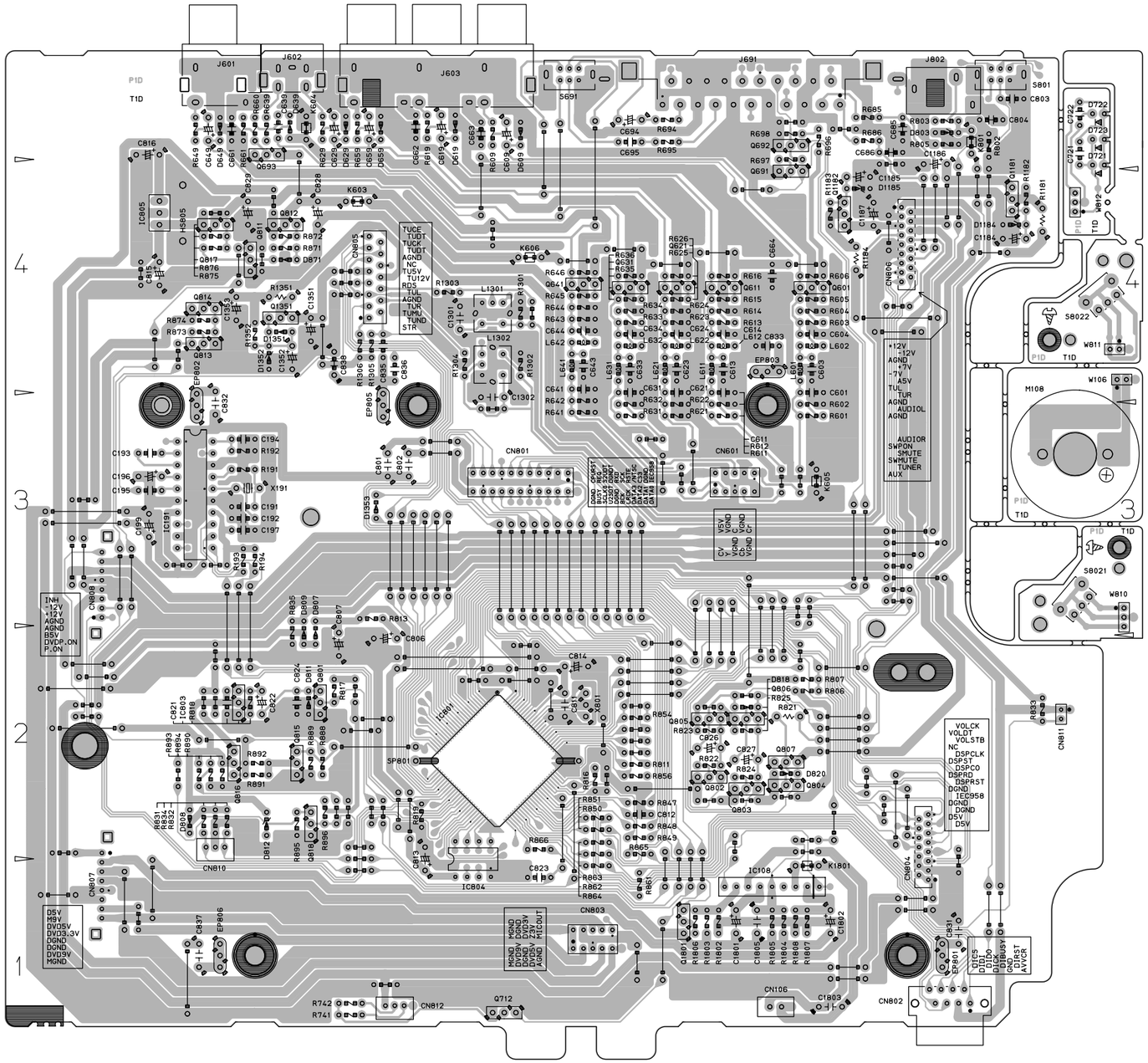
NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL.
2. UNLESS OTHERWISE SPECIFIED.
   - ALL RESISTORS ARE 1/4W ±5% CARBON RESISTOR.
   - ALL CAPACITORS ARE 50V CAPACITOR.
   - ALL RESISTANCE VALUES ARE IN OHM(Ω).
   - ALL CAPACITANCE VALUES ARE IN μF(=mf).
   - ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF) /RATED VOLTAGE (V).
   - ALL DIODES ARE 1SS133-T2.
3. ※ MARKING ARE USED DIFFERENT VERSION.

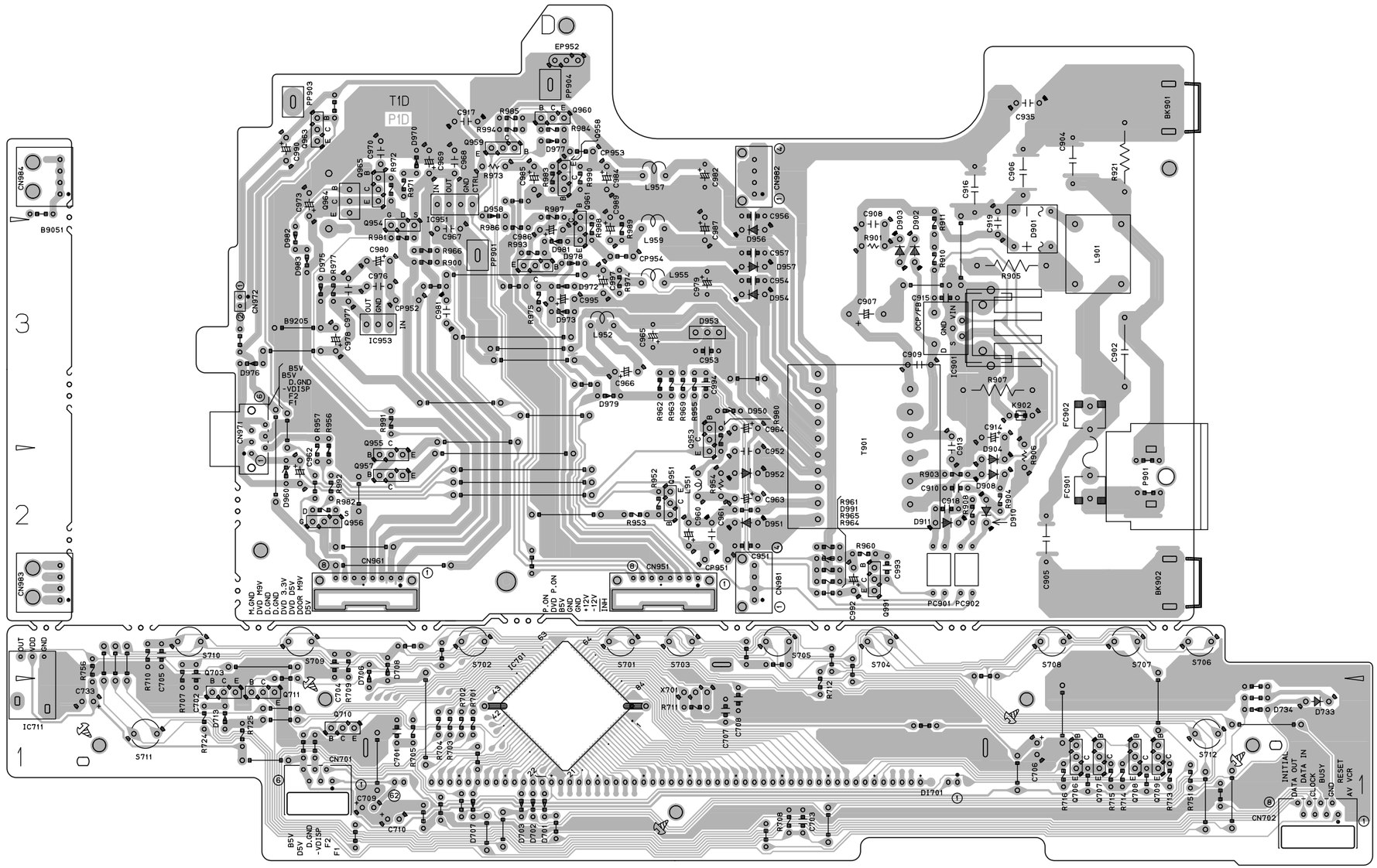
The parts marked ⚠ or ▭ are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Printed circuit boards

■ Main board

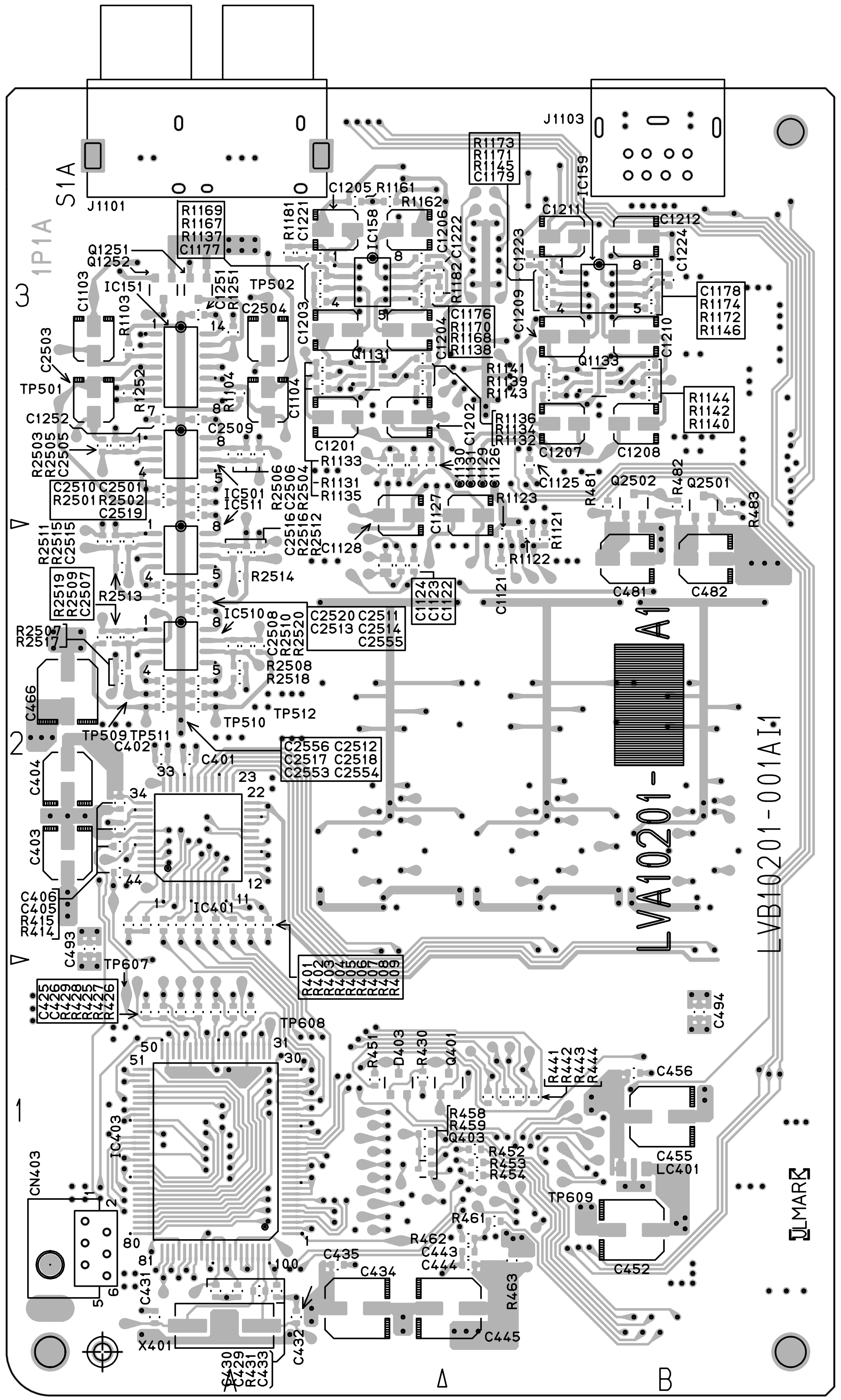


■ Power supply and front panel boards

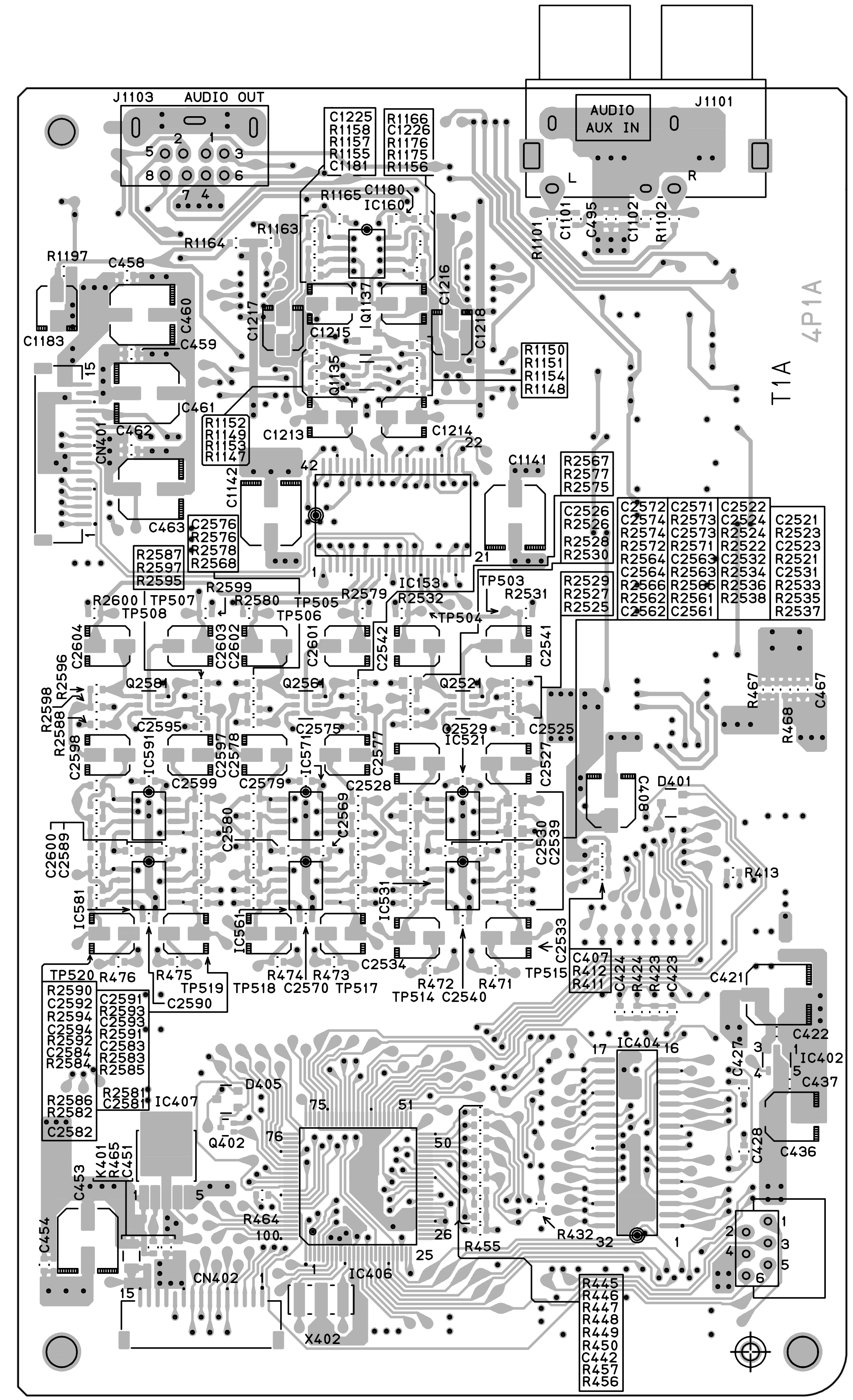


■ Audio input/output and DSP boards

(Surface view)


J1101
S1A
1P1A
J1103
IC159
IC158
IC151
IC401
IC403
IC501
IC511
IC510
Q1251
Q1252
Q1131
Q1133
Q2502
Q2501
Q401
Q403
D403
CN403
X401
TP501
TP502
TP509
TP510
TP511
TP512
TP607
TP608
TP609
C481
C482
C452
C455
LC401
C456
C434
C435
C445
R463
LVA10201-A1
LVB10201-001A1-1
LMARK
A
B

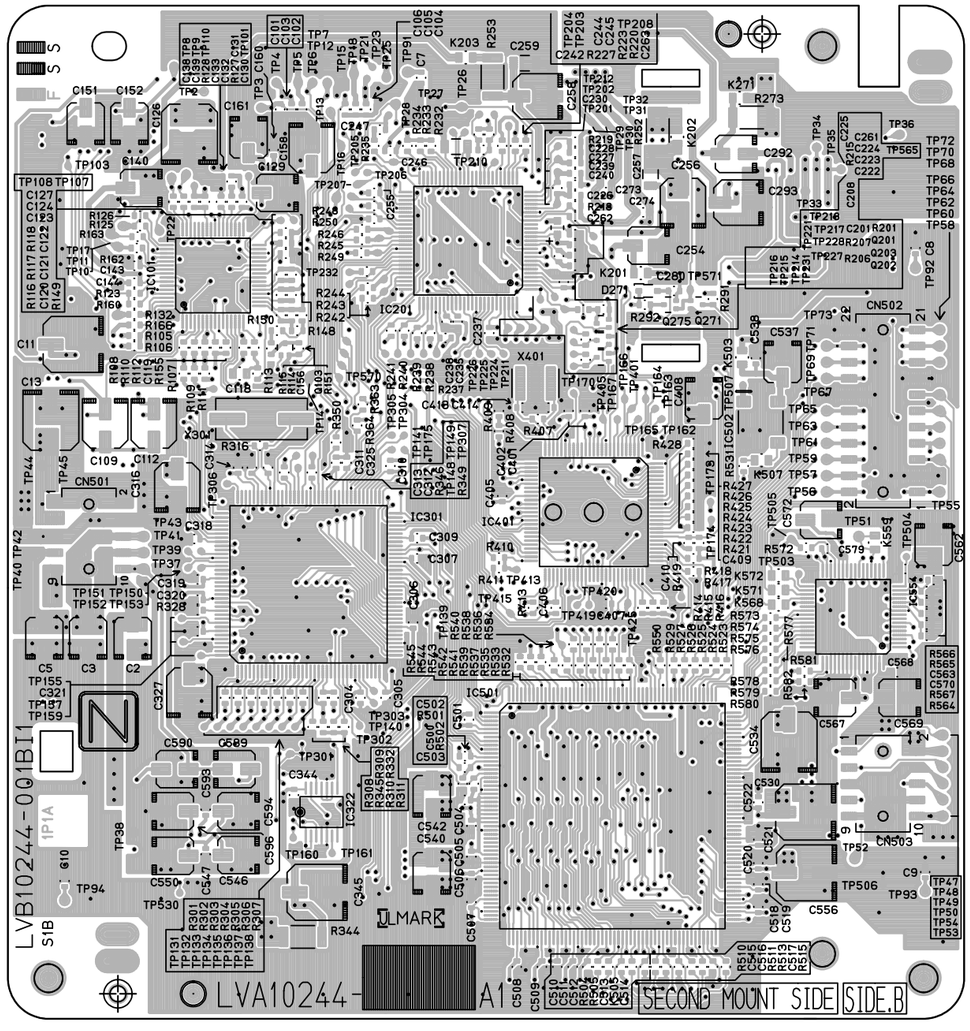
(Bottom view)


J1103 AUDIO OUT
AUDIO AUX IN
J1101
L
R
4P1A
T1A
IC160
IC153
IC521
IC531
IC561
IC571
IC581
IC591
IC402
IC404
IC406
IC407
Q1135
IQ1137
Q2581
Q2561
Q2521
Q2529
Q402
D401
D405
CN401
CN402
X402
TP503
TP504
TP505
TP506
TP507
TP508
TP514
TP515
TP517
TP518
TP519
TP520
C458
C459
C460
C461
C462
C463
C421
C422
C436
C437
C467
R467
R468
R413
R432
R455

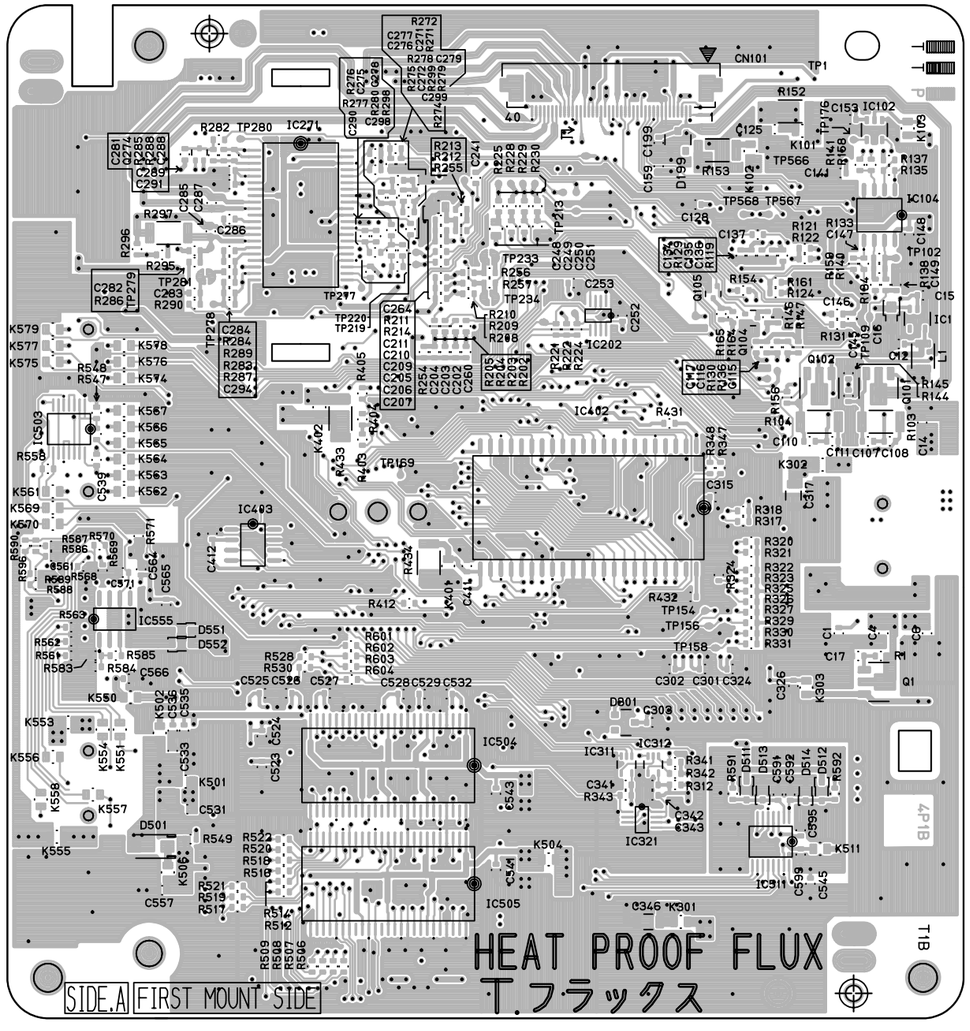
	A	B	C	D	E	F	G	H	I	J

■ DVD servo board

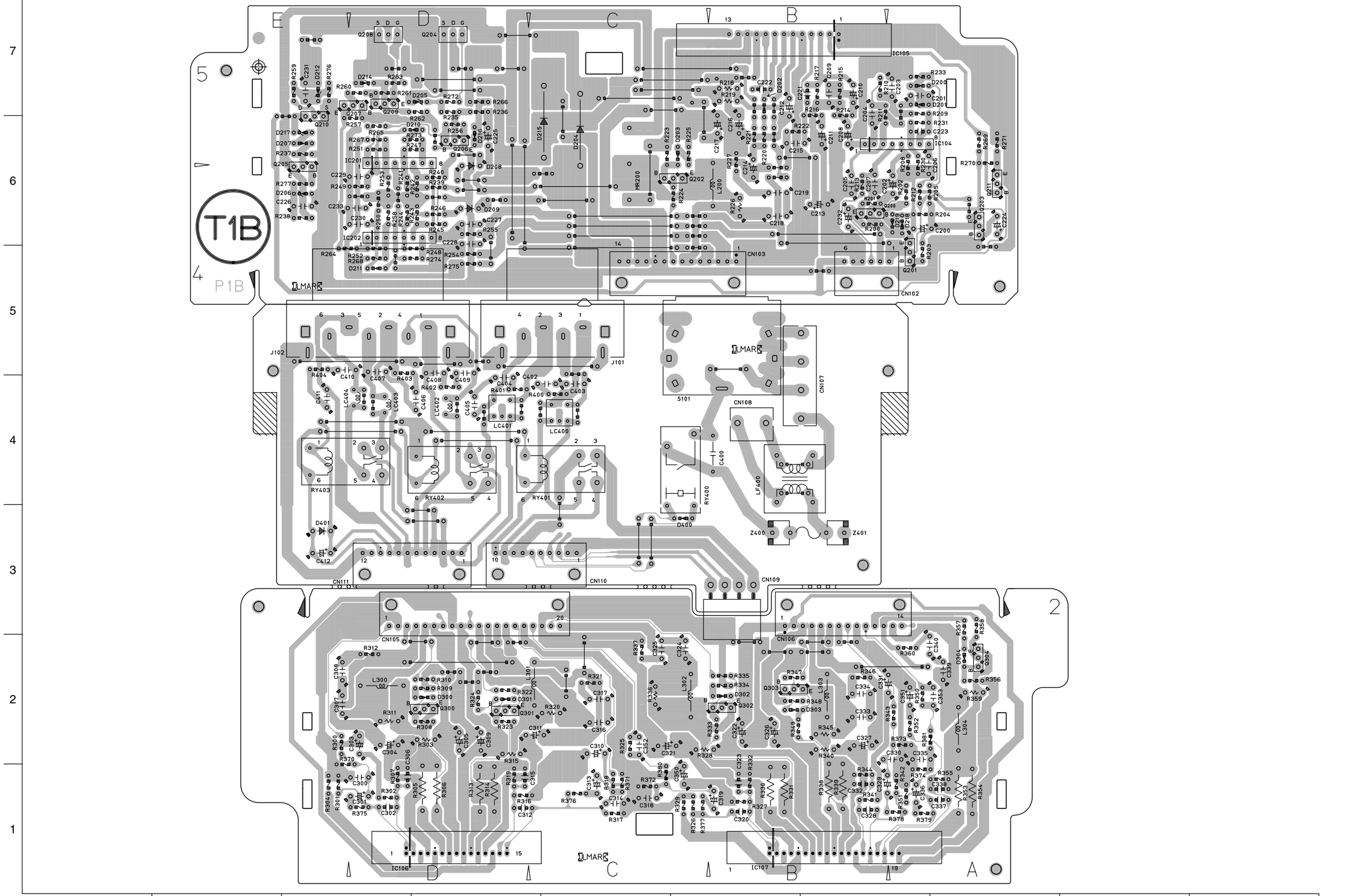
(Surface view)



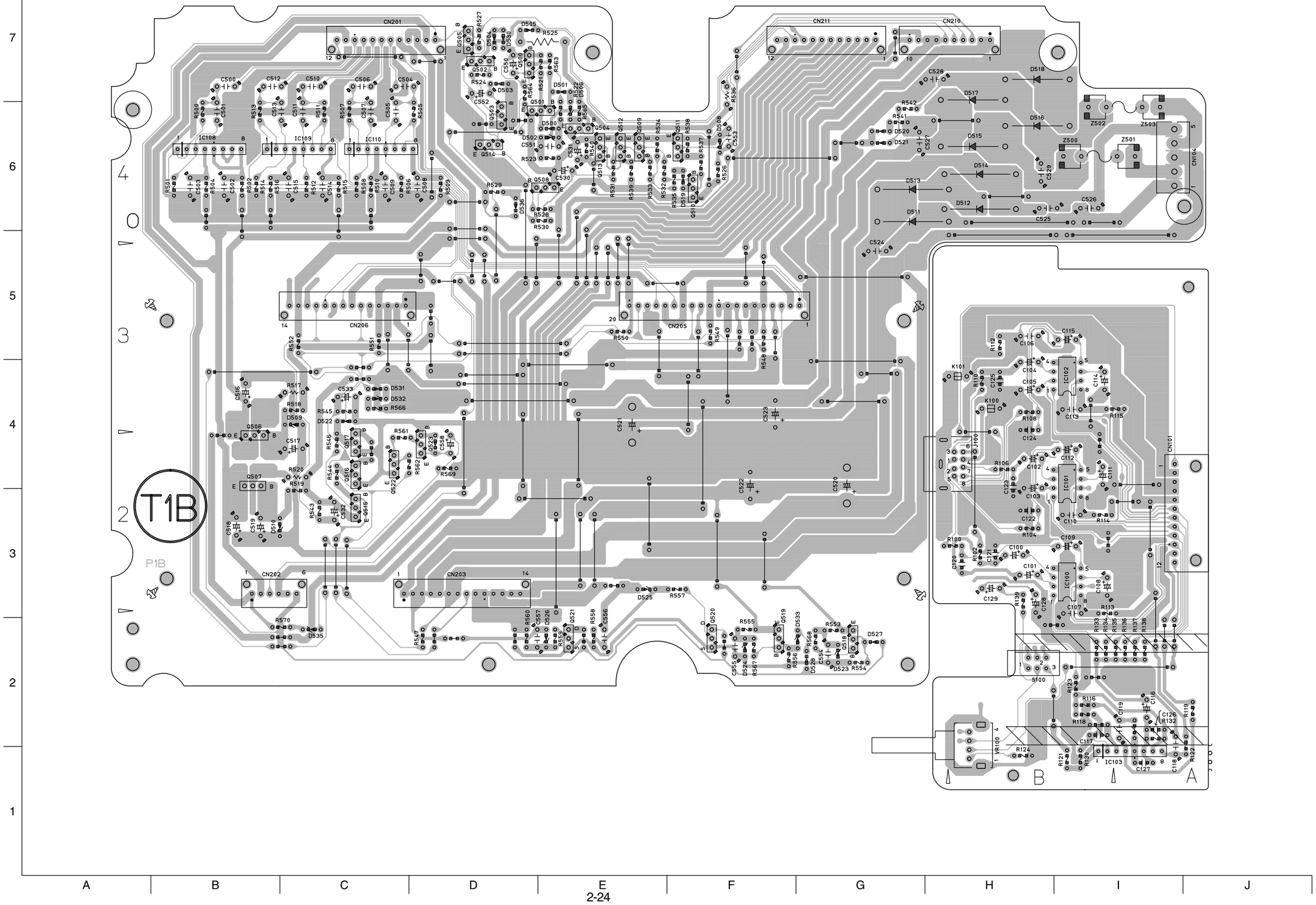
(Bottom view)



■ Powered subwoofer board (SP-PWA9) 1/2



■ Powered subwoofer board (SP-PWA9) 2/2



PARTS LIST

[XV-THA9R]

* All printed circuit boards and its assemblies are not available as service parts.

Area suffix

B ---------- U.K.
E ---------- Continental Europe
EN ---------- Northern Europe

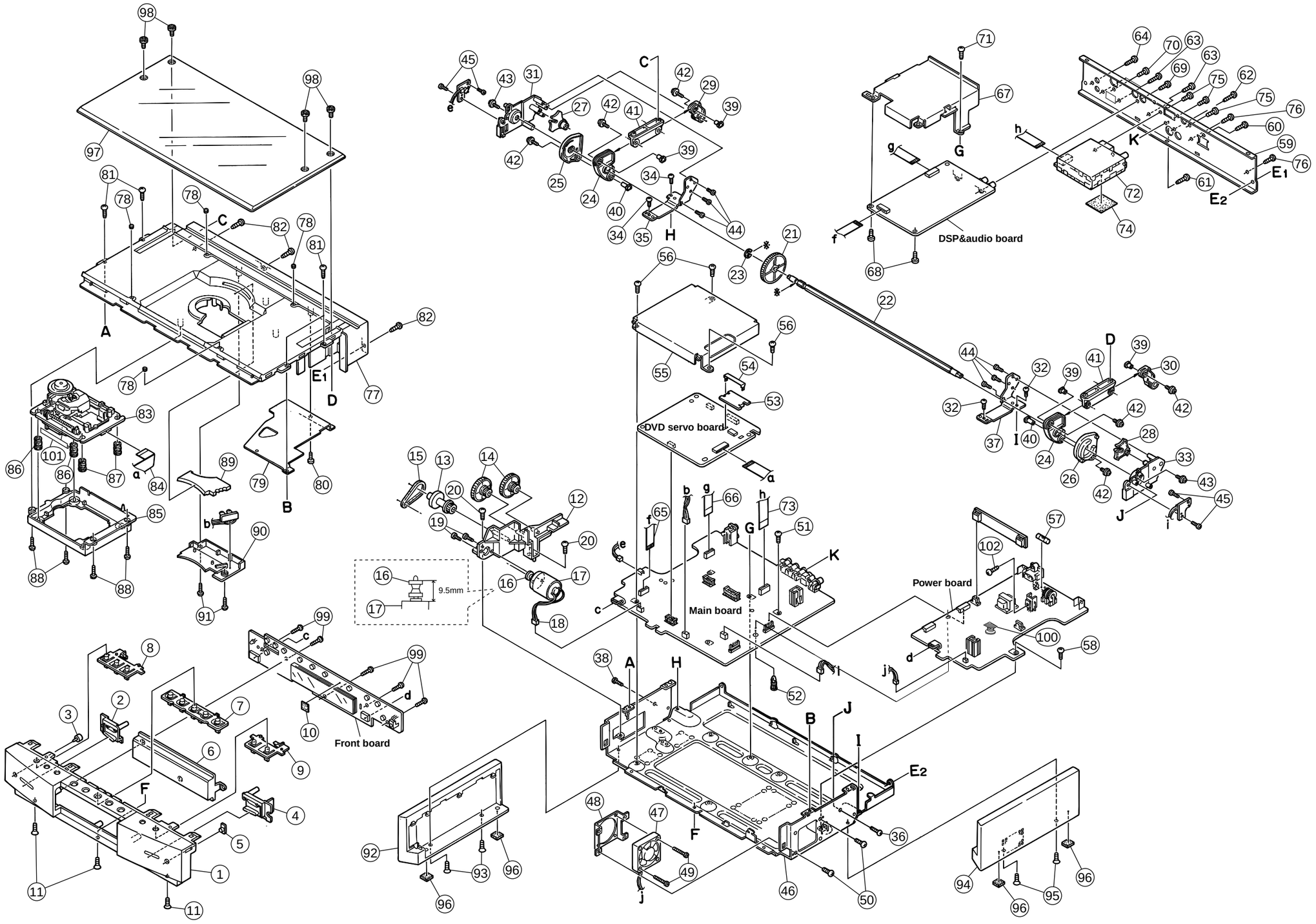
- Contents -

Exploded view of general assembly and parts list ---------- 3- 3
DVD mechanism assembly and parts list ---------- 3- 5
Electrical parts list ---------- 3- 7
Packing materials and accessories parts list ---------- 3-20

< MEMO >

Exploded view of general assembly and parts list

Block No. M 1 M M



■ Parts list (General assembly)

Block No. M1MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	1	LV10441-003A	FRONT PANEL	1	PS/PAINT/SILK	
	2	LV32329-001A	PUSH BUTTON	1	POWER	
	3	VJK4493-001SC	LENS(STANDBY)	1	STANDBY LED	
	4	LV32330-001A	PUSH BUTTON	1	OPEN	
	5	E408131-001	REMOTE LENS	1	REMOTE	
	6	LV20891-001A	LENS	1	AS	
	7	LV20890-001A	PUSH BUTTON	1	PS/PLAY	
	8	LV32332-001A	PUSH BUTTON	1	PS/LEFT	
	9	LV32333-001A	PUSH BUTTON	1	PS/RIGHT	
	10	LE30001-011A	SPACER	1		
	11	QYSSST3006Z	SCREW	3	F.P+B.CHASSIS	
	12	LV20892-001A	MOTOR BASE	1	ABS	
	13	LV42027-001A	GEAR 1	1	POM	
	14	LV42028-001A	GEAR 2	2	POM	
	15	LV41598-001A	BELT	1		
	16	LV41536-001A	PULLEY	1		
	17	QAR0100-001	DC MOTOR	1		
	18	WJM0133-002A	E-SI C WIRE	1		
	19	QYSPSP3004Z	SCREW	2	DC MOTOR+M.BASE	
	20	QYSBST3008Z	T.SCREW	2	MOTER.B+BOTTOM.	
	21	LV42029-001A	MAIN GEAR	1	POM	
	22	LV32341-001A	SHAFT 1	1		
	23	QYREE6000X	E RING	1	MAIN GEAR	
	24	LV31690-001A	ARM	2	ABS	
	25	LV31691-001A	G.WHEEL(L)	1	POM	
	26	LV31692-001A	G.WHEEL(R)	1	POM	
	27	LV31693-001A	G.GEAR(L)	1	PBT	
	28	LV31694-001A	G.GEAR(R)	1	PBT	
	29	LV31695-001A	ARM GEAR(L)	1	PBT	
	30	LV31696-001A	ARM GEAR(R)	1	PBT	
	31	LV31697-002A	GEAR BASE(L)	1	PBT	
	32	QYSBST3006Z	T.SCREW	2	GEAR.B+BOTTOM	
	33	LV31698-002A	GEAR BASE(R)	1	PBT	
	34	QYSBST3006Z	T.SCREW	2	GEAR.B+BOTTOM	
	35	LV32127-001A	GEAR BKT(L)	1	EGC T1	
	36	QYSBSF2606Z	SCREW	1		
	37	LV32128-001A	GEAR BKT(R)	1	EGC T1	
	38	QYSBSF2606Z	SCREW	1		
	39	LV41929-001A	SHAFT 4	4	PBT	
	40	LV41930-001A	SHAFT 5	2	PBT	
	41	LV32334-001A	DOOR BASE	2	POM	
	42	QYSPSFG2605N	SCREW	6	DOOR BASE+ARM	
	43	QYSPSPG3006Z	SCREW	2	SAFT 1+G.BASE	
	44	QYSDSF2606Z	SCREW	6	G.BKT+G.BASE	
	45	QYSDSF2606Z	SCREW	4	SW.PWB+G.BASE	
	46	LV10443-001A	BOTTOM CHASSIS	1	EGC T1.0	
	47	QAR0148-001	FAN MOTOR	1		
	48	LV41799-001A	FAN BRACKET	1		
	49	QYSPST3012Z	T.SCREW	2	FAN + FAN BKT	
	50	QYSBST3006Z	T.SCREW	2	FAN BKT + B CHA	
	51	QYSBST3006Z	T.SCREW	1	BOTTOM+MAIN PWB	

■ Parts list (General assenbly)

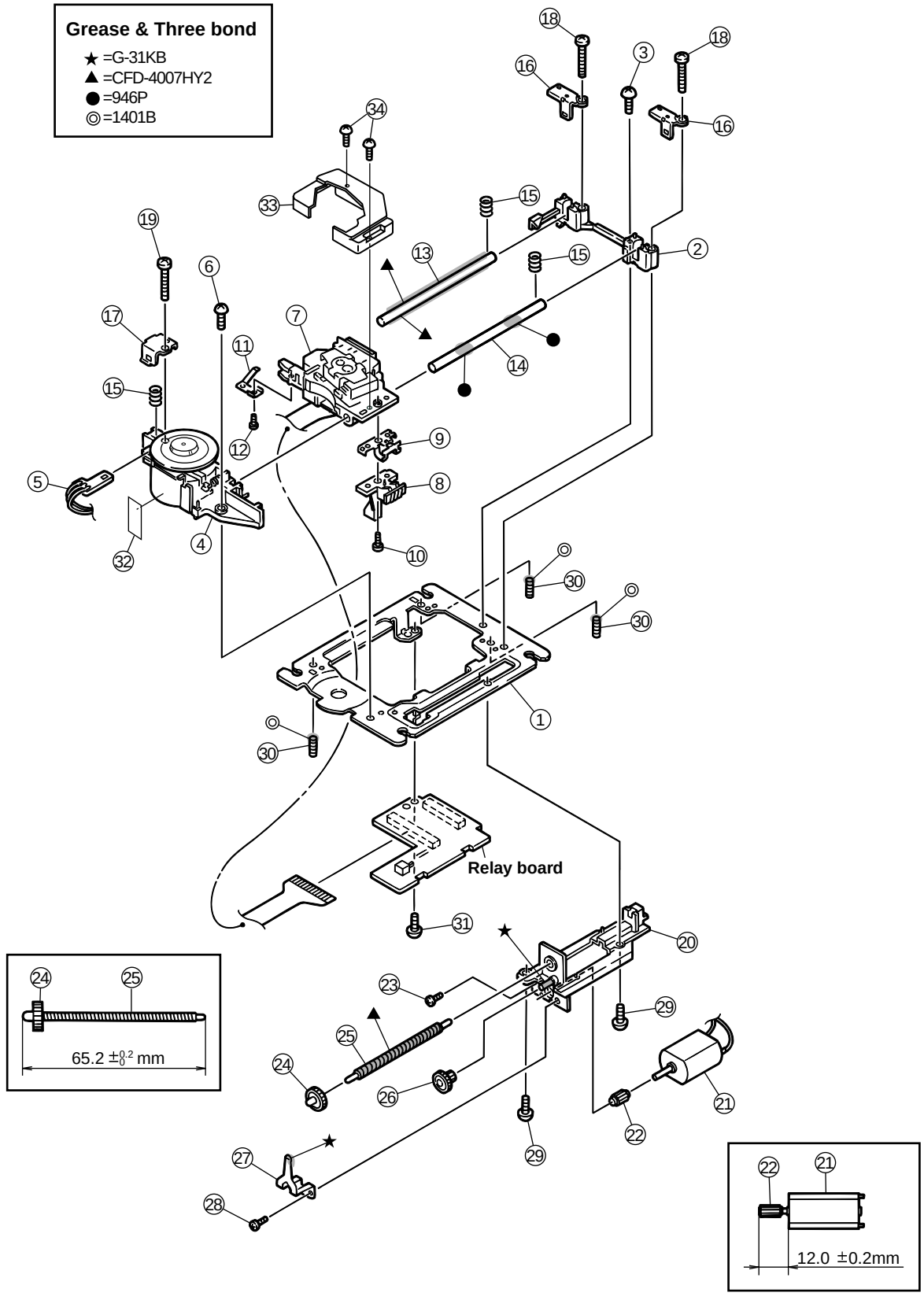
Block No. M1MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	52	LV42282-001A	FASTENER	1	MAIN + POWER	
	53	LV41362-201A	HEAT SINK	1	FOR DVD DRIVER	
	54	LV41363-202A	HOLDER	1	FOR HEAT SINK	
	55	LV32335-001A	SHIELD CASE	1	DVD PWB	
	56	QYSBST3006Z	T.SCREW	3	DVD SHIELD	
⚠	57	QMF51E2-1R6-J1	FUSE	1		
	58	QYSBST3006Z	T.SCREW	1	SUPPLY PWB	
	59	LV20928-003A	REAR PANEL	1	SECC T0.8	
	60	QYSBSGY3008M	SPECIAL SCREW	1	AC IN	
	61	QYSBSGY3008M	SPECIAL SCREW	1	COMPOSITE	
	62	QYSBSGY3008M	SPECIAL SCREW	1	S VIDEO	
	63	QYSBSGY3008M	SPECIAL SCREW	2	AV OUT 21P	
	64	QYSBSGY3008M	SPECIAL SCREW	1	AV COMPULINK	
	65	QUQ810-1509AJ	FFC WIRE	1	FROM CN402 TO C	
	66	QUQ810-1710AJ	FFC WIRE	1	FROM CN401 TO C	
	67	LV32336-001A	SHIELD CASE	1	EGC T0.8 DTS	
	68	QYSDSG3006N	T.SCREW	2	DTS+SHIELD	
	69	QYSBSGY3008M	SPECIAL SCREW	1	AUX IN	
	70	QYSDST3006M	SCREW	1	SYSTEM	
	71	QYSBST3006Z	T.SCREW	1	DTS+CHASSIS	
	72	QAU0232-001	TUNER	1	FM/AM TUNER PAC	
	73	QUQB12-1510AJ	FFC WIRE	1	FROM TUNER TO C	
	74	LV30225-081A	SPACER	1		
	75	QYSDST3006M	SCREW	3	TUNER	
	76	QYSBSGY3008M	SPECIAL SCREW	2	EARTH PLATE	
	77	LV10442-005A	TOP PANEL	1	PS/PAINT	
	78	LV41821-001A	FELT	4	TOP(CD DOOR)	
	79	LV32538-001A	SHIELD CASE	1		
	80	QYSDSF2606Z	SCREW	1	TOP + SHIELD CASE	
	81	QYSBST3006Z	T.SCREW	4	BOTTOM.C+TOP	
	82	QYSBSGY3008M	SPECIAL SCREW	3	TOP+REAR	
	83	----------	DVD TRAVERSE ME	1	CD MECHA	
	84	QUQ605-4020AJ	FFC WIRE	1	DVD MECHA TO DVD	
	85	LV20927-001A	MECHA HOLDER	1	PS	
	86	LV41120-003A	INSULATOR	2	HARD(T.TABLE)	
	87	LV41120-004A	INSULATOR	2	SOFT	
	88	QYSBSF2608Z	T.SCREW	4	M.HOLDER+TOP	
	89	LV32340-001A	INDICATOR	1	AS	
	90	LV32338-001A	LED COVER	1	AS	
	91	QYSBSF2608Z	T.SCREW	2	AS	
	92	LV10445-001A	SIDE PANEL(L)	1	PS/PAINT	
	93	QYSSST3006Z	SCREW	2	S.PANEL+BOTTOM	
	94	LV10446-001A	SIDE PANEL(R)	1	PS/PAINT	
	95	QYSSST3006Z	SCREW	2	S.PANEL+BOTTOM	
	96	E75896-002	FELT SPACER	4	FOOT	
	97	LV10444-001A	DOOR	1	PMMA	
	98	LV41587-001A	SPECIAL SCREW	4	DOOR+D.BASE	
	99	QYSDSF2608Z	SCREW	5	FRONT C.B	
	100	LV30225-0B3A	SPACER	1		
	101	VYSA1R4-050	SPACER	1		
	102	QYSBSE3008Z	SCREW	1	FOR IC901+HS901	

DVD mechanism assembly and parts list

Block No. M 2 M M

FXL-V6T-2C



■ Parts list (DVD mechanism)

Block No. M2MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	1	LV20638-001A	MECHA BASE	1		
	2	LV20635-001A	SHAFT HOLDER	1		
	3	QYSBST2606M	T.SCREW	1		
	4	FXL-V6TSPSV-1C	SP.MOTOR ASSY	1		
	5	QUM193-08B2B2	PARA RIBON WIRE	1		
	6	QYSBST2606M	T.SCREW	1	FOR S.BASE&M.BASE	
	7	OPTIMA-2010A3	DVD PICK UP	1		
	8	LV31670-001A	SWITCH ACTUATOR	1		
	9	LV31666-002A	LEAD SPRING	1		
	10	QYSPSGT2040M	SCREW	1		
	11	LV31743-002A	P.U. SPRING	1		
	12	QYSPSGT1416M	MINI SCREW	1	FOR PU.SPRING	
	13	LV41121-002A	SHAFT	1	MAIN SHAFT	
	14	LV41121-002A	SHAFT	1	SUB SHAFT	
	15	LV41732-001A	SKEW SPRING	3		
	16	LV31669-001A	SHAFT STOPPER R	2		
	17	LV31668-001A	SHAFT STOPPER F	1		
	18	QYSPST2614M	SCREW	2	FOR SSTOPER R	
	19	QYSPST2614M	SCREW	1	FOR SSTOPER F	
	20	LV31746-003A	FEED HOLDER ASY	1		
	21	QAR0127-001	FEED MOTOR	1		
	22	LV41510-001A	FEED GEAR T	1		
	23	QYSPSPU2040M	SCREW	1		
	24	LV41512-001A	FEED GEAR E	1		
	25	LV41517-001A	LEAD SCREW	1		
	26	LV41511-002A	FEED GEAR M	1		
	27	LV31667-001A	THRUST SPRING	1		
	28	QYSPSPU2040M	SCREW	1		
	29	QYSBST2606M	T.SCREW	2	FOR F.HOLDER	
	30	QYYASPF2608N	HEX SCREW	3	FOR TILT ADJUST	
	31	QYSBST2606M	T.SCREW	1	FOR PW BOARD	
	32	LV30225-0A4A	SPACER	1		
	33	LV32320-003A	PICK COVER	1		
	34	QYSPSGT1740M	TAP SCREW	2	FOR P.U. COVER	

■ **Electrical parts list (Main board)** **Block No. 01**

⚠	Item	Parts number	Parts name	Remarks	Area
	BK691	LE30696-001A	EARTH PLATE	FOR J691	
	C 191	QCBB1HK-820Y	C CAPACITOR	82PF 10% 50V	
	C 192	QCSB1HJ-470Y	C CAPACITOR	47PF 5% 50V	
	C 193	QCBB1HK-561Y	C CAPACITOR	560PF 10% 50V	
	C 194	QCBB1HK-104Y	TF CAPACITOR	.10MF 10% 50V	
	C 195	QCBB1HK-331Y	C CAPACITOR	330PF 10% 50V	
	C 196	QETN1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
	C 197	QCBB1HK-473Y	C CAPACITOR	.047MF 10% 50V	
	C 199	QETN1CM-106Z	E CAPACITOR	10MF 20% 16V	
	C 621	QCBB1HK-121Y	C CAPACITOR	120PF 10% 50V	
	C 623	QCSB1HJ-470Y	C CAPACITOR	47PF 5% 50V	
	C 624	QCSB1HJ-100Y	C CAPACITOR	10PF 5% 50V	
	C 629	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
	C 631	QCBB1HK-121Y	C CAPACITOR	120PF 10% 50V	
	C 633	QCSB1HJ-470Y	C CAPACITOR	47PF 5% 50V	
	C 634	QCSB1HJ-100Y	C CAPACITOR	10PF 5% 50V	
	C 639	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 641	QCBB1HK-121Y	C CAPACITOR	120PF 10% 50V	
	C 643	QCSB1HJ-470Y	C CAPACITOR	47PF 5% 50V	
	C 644	QCSB1HJ-100Y	C CAPACITOR	10PF 5% 50V	
	C 649	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
	C 661	QDGB1HK-102Y	C CAPACITOR		
	C 664	QDYB1CM-103Y	C.CAPACITOR		
	C 694	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
	C 695	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 721	QCBB1HK-103Y	C CAPACITOR	.010MF 10% 50V	
	C 722	QCBB1HK-103Y	C CAPACITOR	.010MF 10% 50V	
	C 801	QCF31HZ-103Z	C CAPACITOR	.010MF +80:-20%	
	C 802	QCF31HZ-103Z	C CAPACITOR	.010MF +80:-20%	
	C 804	QDYB1CM-103Y	C.CAPACITOR		
	C 806	QEZ0229-479Z	EDL.CAPACITOR	47000MF	
	C 807	QEKC0JM-227Z	E CAPACITOR	220MF 20% 6.3V	
	C 811	QCF31HZ-103Z	C CAPACITOR	.010MF +80:-20%	
	C 812	QCBB1HK-473Y	C CAPACITOR	.047MF 10% 50V	
	C 813	QEKC1AM-107Z	E.CAPACITOR	100MF 20% 10V	
	C 814	QEKC1AM-107Z	E.CAPACITOR	100MF 20% 10V	
	C 815	QETN1CM-107Z	E CAPACITOR	100MF 20% 16V	
	C 816	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 821	QDYB1CM-103Y	C.CAPACITOR		
	C 822	QETN1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
	C 823	QDGB1HK-102Y	C CAPACITOR		
	C 824	QDVB1EZ-223Y	C CAPACITOR		
	C 826	QEKC1HM-224Z	E CAPACITOR	.22MF 20% 50V	
	C 828	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 829	QETN1CM-107Z	E CAPACITOR	100MF 20% 16V	
	C 833	QDYB1CM-103Y	C.CAPACITOR		
	C 835	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 836	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 837	QCF31HZ-223Z	C CAPACITOR	.022MF +80:-20%	
	CN106	QGA2501C1-02	2P CONNECTOR		
	CN601	QGB2027M3-10S	CONNECTOR	TO DVD MODULE	
	CN801	QGB2027M4-22S	CONNECTOR	TO DVD MODULE	
	CN802	QGB1216J1-08S	CONNECTOR	TO FRONT	
	CN803	QGB2027M3-10S	CONNECTOR	TO DVD MODULE	
	CN804	QGF1016C1-15	FFC CONNECTOR	TO AUDIO	
	CN805	QGF1205C1-15	CONNECTOR	TO TUNER	
	CN806	QGF1016C1-17	CONNECTOR	TO AUDIO	
	CN807	QGB2011MP-08	B TO B CONNE	TO POWER	
	CN808	QGB2011MP-08	B TO B CONNE	TO POWER	
	CN810	QGA2001C1-03	3P PLUG ASSY		
	CN811	QGA2001F1-02	2P CONNECTOR		
	CN812	QGA2001C1-03	3P PLUG ASSY		
	C1184	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	

⚠	Item	Parts number	Parts name	Remarks	Area
	C1185	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
	C1186	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C1187	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C1301	QFN31HJ-562Z	M CAPACITOR	5600PF 5% 50V	
	C1302	QFN31HJ-562Z	M CAPACITOR	5600PF 5% 50V	
	C1351	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C1352	QETN1HM-106Z	E CAPACITOR	10MF 20% 50V	
	C1353	QETN1CM-107Z	E CAPACITOR	100MF 20% 16V	
	C1801	QEKC1CM-106Z	E CAPACITOR	10MF 20% 16V	
	C1802	QEKC1CM-107Z	E.CAPACITOR	100MF 20% 16V	
	C1803	QCZ0205-155Z	ML C CAPACITOR	1.5MF	
	C1805	QCZ0205-155Z	ML C CAPACITOR	1.5MF	
	D 629	1SS133-T2	SI DIODE		
	D 639	1SS133-T2	SI DIODE		
	D 649	1SS133-T2	SI DIODE		
	D 721	SELU1E56BM	LED	DISC LIGHT	
	D 722	SELU1E56BM	LED	DISC LIGHT	
	D 803	MTZJ6.2C-T2	Z DIODE I/M		
	D 807	1SS133-T2	SI DIODE		
	D 808	1SS133-T2	SI DIODE		
	D 809	1SS133-T2	SI DIODE		
	D 811	1SS133-T2	SI DIODE		
	D 812	MTZJ4.7B-T2	Z DIODE I M		
	D 820	1SS133-T2	SI DIODE		
	D 871	1SS133-T2	SI DIODE		
	D1184	MTZJ7.5C-T2	ZENER DIODE		
	D1185	MTZJ7.5C-T2	ZENER DIODE		
	D1351	1SS133-T2	SI DIODE		
	D1352	MTZJ6.8A-T2	ZENER DIODE		
	D1353	1SS133-T2	SI DIODE		
	EP803	QNZ0136-001Z	EARTH PLATE		
	EP805	QNZ0136-001Z	EARTH PLATE		
	EP806	QNZ0136-001Z	EARTH PLATE		
	HS805	LE40505-001A	HEAT SINK	FOR IC805	
	IC108	TA8409S	IC	MOTOR DRIVER	
	IC191	SAA6588	IC(RDS)		
	IC801	MN101C49GHT1	IC	SYSTEM MICOM	
	IC803	IC-PST9140-T	IC	RESET	
	IC804	BR93LC46-W	IC	EEPROM	
	IC805	NJM78M05FA	IC	A5V	
	J 601	QNN0017-002	PIN JACK	COMPOSITE	
	J 602	QND0019-001	S-CONNECTOR		
	J 691	QNZ0099-001	RGB CONNECTOR	SCART	
	J 802	QNS0083-001	3.5 JACK	AV COMPULINK 2	
	K 603	QQR0779-001Z	INDUCTOR		
	K 605	QQR0779-001Z	INDUCTOR		
	K 606	QQR0779-001Z	INDUCTOR		
	K 801	QQR0779-001Z	INDUCTOR		
	L 621	QQL071J-120Y	INDUCTOR		
	L 622	QQL071J-5R6Y	INDUCTOR		
	L 631	QQL071J-120Y	INDUCTOR		
	L 632	QQL071J-5R6Y	INDUCTOR		
	L 641	QQL071J-120Y	INDUCTOR		
	L 642	QQL071J-5R6Y	INDUCTOR		
	O 621	KTA1267/YG/-T	TRANSISTOR		
	O 631	KTA1267/YG/-T	TRANSISTOR		
	O 641	KTA1267/YG/-T	TRANSISTOR		
	O 691	KRC107M-T	D.TR.I.M		
	O 692	KRC107M-T	D.TR.I.M		
	Q 712	KRC102M-T	D.TRANSISTOR		
	O 801	KRC107M-T	D.TR.I.M		
	Q 802	KRC102M-T	D.TRANSISTOR		
	O 804	KRC102M-T	D.TRANSISTOR		

■ **Electrical parts list (Main board)** **Block No. 01**

⚠	Item	Parts number	Parts name	Remarks	Area
	O 805	KTA1267/YG/-T	TRANSISTOR		
	O 807	KRA102M-T	D.TRANSISTOR		
	Q 811	KRC102M-T	D.TRANSISTOR		
	O 812	KTA1271/OY/-T	TRANSISTOR		
	Q 813	KRC104M-T	D.TR.I.M		
	O 814	KTA1271/OY/-T	TRANSISTOR		
	Q 815	KRC102M-T	D.TRANSISTOR		
	O 817	KTA1271/OY/-T	TRANSISTOR		
	Q 818	KRC111M-T	TR I/M		
	O1181	KTC3203/OY/-T	TRANSISTOR	E.VOL +7V	
	O1182	KTA1271/OY/-T	TRANSISTOR	E.VOL -7V	
	O1351	KTC3203/OY/-T	TRANSISTOR	TUNER 5V	
	O1801	KRC103M-T	TR I/M		
	R 191	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 192	QRE141J-474Y	C RESISTOR	470K 5% 1/4W	
	R 193	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 194	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 621	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
	R 622	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
	R 623	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
	R 624	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
	R 625	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 626	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
	R 629	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
	R 631	QRE141J-0R0Y	C RESISTOR	5% 1/4W	
	R 632	QRE141J-361Y	C RESISTOR	360 5% 1/4W	
	R 633	QRE141J-0R0Y	C RESISTOR	5% 1/4W	
	R 634	QRE141J-361Y	C RESISTOR	360 5% 1/4W	
	R 635	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 636	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 639	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
	R 641	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
	R 642	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
	R 643	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
	R 644	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
	R 645	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 646	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
	R 649	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
	R 685	QRE141J-151Y	C RESISTOR	150 5% 1/4W	
	R 686	QRE141J-151Y	C RESISTOR	150 5% 1/4W	
	R 694	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
	R 695	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
	R 696	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 697	QRE141J-821Y	C RESISTOR	820 5% 1/4W	
	R 698	QRE141J-123Y	C RESISTOR	12K 5% 1/4W	
	R 741	QRE141J-331Y	C RESISTOR	330 5% 1/4W	
	R 742	QRE141J-331Y	C RESISTOR	330 5% 1/4W	
	R 803	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 805	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 807	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 811	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 813	QRE141J-331Y	C RESISTOR	330 5% 1/4W	
	R 817	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 818	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 821	QRZ9006-4R7X	F RESISTOR	4.7 1/0W	
	R 822	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 823	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 831	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 832	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 833	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 834	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 835	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 847	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 848	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 849	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 850	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 851	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 861	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 862	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 863	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 864	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 865	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 866	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 871	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 872	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 873	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 874	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 875	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 876	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 891	QRE141J-181Y	C RESISTOR	180 5% 1/4W	
	R 892	QRE141J-151Y	C RESISTOR	150 5% 1/4W	
	R 895	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 896	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R1181	QRZ9005-100X	F.RES I/M	10 1/0W	
	R1182	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
	R1183	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
	R1184	QRZ9005-100X	F.RES I/M	10 1/0W	
	R1301	QRE141J-682Y	C RESISTOR	6.8K 5% 1/4W	
	R1302	QRE141J-682Y	C RESISTOR	6.8K 5% 1/4W	
	R1303	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R1304	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R1305	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R1306	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R1351	QRZ9006-4R7X	F RESISTOR	4.7 1/0W	
	R1352	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R1802	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
	R1803	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R1804	QRE141J-6R2Y	C RESISTOR	6.2 5% 1/4W	
	R1806	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
	R1807	QRE141J-151Y	C RESISTOR	150 5% 1/4W	
	S 691	QSW0454-001	SW	VIDEO SE	
	SP801	VYH7237-002SC	IC HOLDER	FOR IC801	
	S8021	QSW0851-001	DETECT SWITCH	DOOR SW(DOOR1/2	
	S8022	QSW0851-001	DETECT SWITCH	DOOR SW(DOOR3)	
	W 810	QJK018-032102	SIN CR C-B WIRE	TO CN810	
	W 811	QJK018-020602	SIN CR C-B WIRE	TO CN811	
	W 812	QJK018-032602	SIN CR C-B WIRE	TO CN812	
	X 191	QAX0263-001Z	CRYSTAL	4.332MHZ	
	X 801	QAX0246-001Z	RESONATOR I.M	8MHZ	

■ **Electrical parts list (Front&spply board)** **Block No. 02**

⚠	Item	Parts number	Parts name	Remarks	Area
	BK701	LV32331-001A	FL HOLDER		
	BK901	E409182-001SM	GRAND TERMINAL		
	BK902	E409182-001SM	GRAND TERMINAL		
	C 701	QDYB1CM-103Y	C.CAPACITOR		
	C 702	QCBB1HK-471Y	C CAPACITOR	470PF 10% 50V	
	C 703	QCBB1HK-471Y	C CAPACITOR	470PF 10% 50V	
	C 704	QCBB1HK-471Y	C CAPACITOR	470PF 10% 50V	
	C 705	QCBB1HK-471Y	C CAPACITOR	470PF 10% 50V	
	C 706	QERF0JM-107Z	E CAPACITOR	100MF 20% 6.3V	
	C 707	QDYB1CM-103Y	C.CAPACITOR		
	C 708	QDYB1CM-103Y	C.CAPACITOR		
	C 709	QERF1HM-475Z	E CAPACITOR	4.7MF 20% 50V	
	C 710	QERF1HM-475Z	E CAPACITOR	4.7MF 20% 50V	
	C 733	QERF0JM-226Z	E CAPACITOR	22MF 20% 6.3V	
⚠	C 902	QFZ9075-683	M CAPACITOR	.068MF	
⚠	C 904	QCZ9079-102	C CAPACITOR	1000PF	
⚠	C 905	QCZ9079-102	C CAPACITOR	1000PF	
⚠	C 907	QEZ0522-826	E.CAPACITOR	82MF	
	C 908	QCZ0136-332Z	C CAPACITOR	3300PF	
	C 909	QCZ0136-101Z	C CAPACITOR	100PF	
	C 910	QCBB1HK-221Y	C CAPACITOR	220PF 10% 50V	
	C 913	QCZ0136-101Z	C CAPACITOR	100PF	
	C 914	QEMX1EM-396Z	E CAPACITOR	39MF 20% 25V	
	C 915	QCBB1HK-471Y	C CAPACITOR	470PF 10% 50V	
⚠	C 916	QCZ9079-332	C CAPACITOR	3300PF	
	C 917	QDYB1CM-103Y	C.CAPACITOR		
	C 918	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 951	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 952	QCZ0136-101Z	C CAPACITOR	100PF	
	C 953	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 954	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 956	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 957	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 960	QEMX1AM-826Z	E CAPACITOR	82MF 20% 10V	
	C 961	QCZ0205-155Z	ML C CAPACITOR	1.5MF	
	C 962	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 963	QEMX1HM-396Z	E CAPACITOR	39MF 20% 50V	
	C 964	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 965	QEMV1AM-108	E CAPACITOR	1000MF 20% 10V	
	C 966	QETN1AM-477Z	E CAPACITOR	470MF 20% 10V	
	C 967	QFVC1HJ-104Z	M.M.CAPACITOR	.10MF 5% 50V	
	C 968	QFVC1HJ-104Z	M.M.CAPACITOR	.10MF 5% 50V	
	C 969	QETN1AM-227Z	E CAPACITOR	220MF 20% 10V	
	C 970	QFVC1HJ-104Z	M.M.CAPACITOR	.10MF 5% 50V	
	C 973	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 976	QFVC1HJ-104Z	M.M.CAPACITOR	.10MF 5% 50V	
	C 977	QFVC1HJ-104Z	M.M.CAPACITOR	.10MF 5% 50V	
	C 978	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 979	QEMV1CM-827	E CAPACITOR	820MF 20% 16V	
	C 980	QETN1HM-106Z	E CAPACITOR	10MF 20% 50V	
	C 981	QCZ0205-155Z	ML C CAPACITOR	1.5MF	
	C 982	QEMV1EM-567	E CAPACITOR	560MF 20% 25V	
	C 984	QETN1EM-227Z	E CAPACITOR	220MF 20% 25V	
	C 985	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 986	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 987	QEMX1EM-187Z	E CAPACITOR	180MF 20% 25V	
	C 989	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 990	QETN1HM-106Z	E CAPACITOR	10MF 20% 50V	
	C 992	QETN1HM-474Z	E CAPACITOR	.47MF 20% 50V	
	C 993	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 994	QDVB1EZ-223Y	C CAPACITOR		
	C 997	QETN1CM-227Z	E CAPACITOR	220MF 20% 16V	
	CN701	QGB1216K1-06S	CONNECTOR	FRONT TO POWER	

⚠	Item	Parts number	Parts name	Remarks	Area
	CN702	QGB1216K1-08S	CONNECTOR	FRONT TO MAIN	
	CN951	QGB2011L1-08	B TO B CONNECTO	TO CN705(SYS)	
	CN961	QGB2011L1-08	B TO B CONNECTO	TO CN704(SYS)	
	CN971	QGB1216J1-06S	CONNECTOR	TO CN832(FL)	
	CN972	QGA2001C1-02	2P PLUG ASSY	FOR DC FAN	
	CN981	QGB2510J1-04	CONNECTOR		
	CN982	QGB2510J1-04	CONNECTOR		
	CN983	QGB2510K2-04	CONNECTOR		
	CN984	QGB2510K2-04	CONNECTOR		
⚠	CP951	ICP-N10-T	ICP		
⚠	CP952	ICP-N5-T	ICP		
⚠	CP953	ICP-N15-T	ICP I/M		
⚠	CP954	ICP-N5-T	ICP		
	D 701	1SS133-T2	SI DIODE		
	D 702	1SS133-T2	SI DIODE		
	D 703	1SS133-T2	SI DIODE		
	D 706	1SS133-T2	SI DIODE		
	D 713	1SS133-T2	SI DIODE		
	D 733	SLR-342VC-T12	LED	H=11.9	
⚠	D 901	S1WB/A/60-4101	BRIDGE DIODE		
	D 902	ERA18-04-T1	FR DIODE		
	D 903	ERA18-04-T1	FR DIODE		
	D 904	ERA18-04-T1	FR DIODE		
	D 908	ERA18-04-T1	FR DIODE		
	D 910	ERA18-04-T1	FR DIODE		
	D 911	ERA18-04-T1	FR DIODE		
	D 950	MTZJ36C-T2	Z.DIODE I.M		
	D 951	ERA18-04-T1	FR DIODE	FUJI	
	D 952	ERA18-04-T1	FR DIODE	FUJI	
⚠	D 953	FMB-24	FUSEIODE		
⚠	D 954	EU2YX-LFH6K	FR DIODE		
⚠	D 956	ERA18-04-T1	FR DIODE		
⚠	D 957	ERA18-04-T1	FR DIODE		
	D 958	1SS133-T2	SI DIODE		
	D 960	MTZJ3.6B-T2	S.B.DIODE		
	D 970	1SS133-T2	SI DIODE		
	D 975	1SS133-T2	SI DIODE		
	D 976	1SS133-T2	SI DIODE		
	D 982	1SS133-T2	SI DIODE		
	D 983	1SS133-T2	SI DIODE		
	D 991	MTZJ5.1B-T2	ZENER DIODE		
	DI701	QLF0080-001	FL TUBE		
	EP952	QNZ0136-001Z	EARTH PLATE		
	FC901	QNG0003-001Z	FUSE CLIP		
	FC902	QNG0003-001Z	FUSE CLIP		
	HS901	E70306-002	HEAT SINK	FOR IC901	
	HS964	LE40505-001A	HEAT SINK		
	IC701	MN173222DG	IC	DISPLAY MICOM	
	IC711	GP1U271X	RM RECIVER	REMOCON	
⚠	IC901	STR-G6651	IC		
	IC951	PQ05RD21	IC		
	IC953	NJM78M05FA	IC		
⚠	L 901	QQR1105-001	LINE FILTER		
	L 951	QQL01BK-R22Z	I0COIL		
	L 952	QQR1098-001	INDUCTOR		
	L 955	QQR1098-001	INDUCTOR		
	L 957	QQR1098-001	INDUCTOR		
	L 959	QQR1098-001	INDUCTOR		
⚠	P 901	QNC0006-001	AC SOCKET		
⚠	PC901	PC123Y02	IC(PHOTO COUPLE		
⚠	PC902	PC123Y02	IC(PHOTO COUPLE		
	PP903	QZW0038-001	WIRE CLAMP		
	PP904	QZW0038-001	WIRE CLAMP		

■ **Electrical parts list (Front&spply board)** **Block No. 02**

⚠	Item	Parts number	Parts name	Remarks	Area
	O 703	KRC103M-T	TR I/M		
	O 706	KRA102M-T	D.TRANSISTOR		
	Q 707	KRA102M-T	D.TRANSISTOR		
	O 708	KRA102M-T	D.TRANSISTOR		
	Q 709	KRA102M-T	D.TRANSISTOR		
	O 710	KRC102M-T	D.TRANSISTOR		
	Q 711	KRC102M-T	D.TRANSISTOR		
	O 951	2SC3576-JVC-T	TRANSISTOR I/M		
	O 953	KTA1267/YG/-T	TRANSISTOR		
	O 954	2SJ537-T	MOS FET I/M		
	O 955	KRA103M-T	TRANSISTOR *		
	O 956	2SJ537-T	MOS FET I/M		
	O 957	KRC103M-T	TR I/M		
	O 958	KTA1271/OY/-T	TRANSISTOR		
	O 959	KRC103M-T	TR I/M		
	O 960	KTA1267/YG/-T	TRANSISTOR		
	O 961	KTC3203/OY/-T	TRANSISTOR		
	O 964	KTA1046/Y/	TRANSISTOR		
	O 965	KTC3199/GL/-T	TRANSISTOR		
	O 991	KTC3199/GL/-T	TRANSISTOR		
	R 701	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 702	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 703	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 704	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 705	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 707	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 708	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 709	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 710	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 711	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 712	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 713	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 714	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 715	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 716	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 724	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 725	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 751	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 756	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 901	QRL01DJ-683X	OMF RESISTOR	68K 5% 1/1W	
	R 903	QRE141J-270Y	C RESISTOR	27 5% 1/4W	
	R 904	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
	R 905	QRL027J-683	OMF RESISTOR	68K 5% 1/2W	
	R 906	QRJ146J-681X	UNF C.RES I/M	680 5% 1/4W	
	R 907	QRT022J-R47	OMF RESISTOR	5% 1/2W	
	R 908	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 910	QRE141J-474Y	C RESISTOR	470K 5% 1/4W	
	R 911	QRE141J-474Y	C RESISTOR	470K 5% 1/4W	
	R 952	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 953	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
⚠	R 954	QRZ9005-100X	F.RES I/M	10 1/0W	
	R 955	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 960	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 961	QRE141J-681Y	C RESISTOR	680 5% 1/4W	
	R 964	QRE141J-105Y	C RESISTOR	1.0M 5% 1/4W	
	R 965	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 966	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 969	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 971	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 972	QRE141J-122Y	C RESISTOR	1.2K 5% 1/4W	
	R 977	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 980	QRE141J-272Y	C RESISTOR	2.7K 5% 1/4W	
	R 981	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	

⚠	Item	Parts number	Parts name	Remarks	Area
	R 982	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 983	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 984	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 985	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 986	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 987	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 988	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
	R 989	QRE141J-333Y	C RESISTOR	33K 5% 1/4W	
	R 990	QRE141J-333Y	C RESISTOR	33K 5% 1/4W	
	R 991	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 992	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	S 701	QSW0683-001Z	PUSH SWITCH	PLAY	
	S 702	QSW0683-001Z	PUSH SWITCH	PAUSE	
	S 703	QSW0683-001Z	PUSH SWITCH	STOP	
	S 704	QSW0683-001Z	PUSH SWITCH	B.SKIP	
	S 705	QSW0683-001Z	PUSH SWITCH	F.SKIP	
	S 706	QSW0683-001Z	PUSH SWITCH	SOURCE	
	S 707	QSW0683-001Z	PUSH SWITCH	DOLBY	
	S 708	QSW0683-001Z	PUSH SWITCH	DSP	
	S 709	QSW0683-001Z	PUSH SWITCH	VOL.DOWN	
	S 710	QSW0683-001Z	PUSH SWITCH	VOL.UP	
	S 711	QSW0683-001Z	PUSH SWITCH	EJECT	
	S 712	QSW0683-001Z	PUSH SWITCH	POWER	
	SP701	VYH7237-005	IC HOLDER	FOR IC701	
⚠	T 901	QQS0097-001	SW TRANSF	DELTA ELECTRONI	
	X 701	QAX0247-001Z	RESONATOR I.M	6MHZ	

■ **Electrical parts list (DSP&audio board)** **Block No. 03**

⚠	Item	Parts number	Parts name	Remarks	Area
	C 401	NCB31HK-102X	C CAPACITOR		
	C 402	NCB31HK-102X	C CAPACITOR		
	C 403	NEA70JM-476X	E.CAPACITOR		
	C 404	NEA70JM-476X	E.CAPACITOR		
	C 405	NCB31CK-104X	C CAPACITOR		
	C 406	NCB31CK-104X	C CAPACITOR		
	C 407	NCB31CK-104X	C CAPACITOR		
	C 408	NEA70JM-476X	E.CAPACITOR		
	C 421	NEA70JM-107X	E.CAPACITOR		
	C 422	NCB31CK-103X	C CAPACITOR		
	C 423	NCS31HJ-101X	C.CAPA. C.M		
	C 424	NCS31HJ-121X	C CAPACITOR		
	C 425	NCB31AK-474X	C CAPACITOR		
	C 426	NCB31CK-103X	C CAPACITOR		
	C 427	NCB31CK-104X	C CAPACITOR		
	C 428	NCB31CK-104X	C CAPACITOR		
	C 429	NCB31CK-104X	C CAPACITOR		
	C 430	NCB31CK-473X	C CAPACITOR		
	C 431	NCS31HJ-180X	C CAPACITOR		
	C 432	NCS31HJ-220X	C CAPACITOR		
	C 433	NCB31CK-103X	C CAPACITOR		
	C 434	NEA70JM-107X	E.CAPACITOR		
	C 435	NCB31CK-103X	C CAPACITOR		
	C 436	NEA70JM-476X	E.CAPACITOR		
	C 442	NCB31HK-101X	C CAPACITOR		
	C 443	NCB31HK-101X	C CAPACITOR		
	C 444	NCB31CK-103X	C CAPACITOR		
	C 445	NEA70JM-107X	E.CAPACITOR		
	C 451	NCB31CK-103X	C CAPACITOR		
	C 452	NEA70JM-107X	E.CAPACITOR		
	C 453	NEA70JM-107X	E.CAPACITOR		
	C 454	NCB31CK-103X	C CAPACITOR		
	C 455	NEA70JM-107X	E.CAPACITOR		
	C 456	NCB31CK-104X	C CAPACITOR		
	C 458	NCB31CK-103X	C CAPACITOR		
	C 459	NCB31CK-103X	C CAPACITOR		
	C 460	NEA71CM-476X	E CAPACITOR		
	C 461	NEA71CM-476X	E CAPACITOR		
	C 462	NCB31CK-103X	C CAPACITOR		
	C 463	NEA70JM-107X	E.CAPACITOR		
	C 466	NEA71CM-476X	E CAPACITOR		
	C 467	NCF31CZ-104X	C CAPACITOR		
	C 493	NCB30JK-105X	C CAPACITOR		
	C 494	NCB31CK-103X	C CAPACITOR		
	C 495	NCB31CK-103X	C CAPACITOR		
	CN401	QGF1016F2-17W	CONNECTOR		
	CN402	QGF1016F2-15W	CONNECTOR C.M		
	C1101	NCB31HK-331X	C CAPACITOR		
	C1102	NCB31HK-331X	C CAPACITOR		
	C1103	NEA71EM-475X	E.CAPACITOR.		
	C1104	NEA71EM-475X	E.CAPACITOR.		
	C1121	NCB31CK-223X	C CAPACITOR		
	C1122	NCB31HK-822X	C CAPACITOR		
	C1123	NCB31HK-153X	C CAPACITOR		
	C1124	NCB21CK-334X	C CAPACITOR		
	C1125	NCB31CK-223X	C CAPACITOR		
	C1126	NCB31CK-223X	C CAPACITOR		
	C1127	NEA71EM-475X	E.CAPACITOR.		
	C1128	NEA71EM-475X	E.CAPACITOR.		
	C1129	NCB31HK-822X	C CAPACITOR		
	C1130	NCB31HK-153X	C CAPACITOR		
	C1131	NCB21CK-334X	C CAPACITOR		
	C1141	NEA71CM-476X	E CAPACITOR		

⚠	Item	Parts number	Parts name	Remarks	Area
	C1142	NEA71CM-476X	E CAPACITOR		
	C1176	NCB31CK-103X	C CAPACITOR		
	C1177	NCB31CK-103X	C CAPACITOR		
	C1178	NCB31CK-103X	C CAPACITOR		
	C1179	NCB31CK-103X	C CAPACITOR		
	C1180	NCB31CK-103X	C CAPACITOR		
	C1181	NCB31CK-103X	C CAPACITOR		
	C1183	NEA71EM-475X	E.CAPACITOR.		
	C1201	NEA71EM-475X	E.CAPACITOR.		
	C1202	NEA71EM-475X	E.CAPACITOR.		
	C1203	NEA71EM-475X	E.CAPACITOR.		
	C1204	NEA71EM-475X	E.CAPACITOR.		
	C1205	NEA71EM-475X	E.CAPACITOR.		
	C1206	NEA71EM-475X	E.CAPACITOR.		
	C1207	NEA71EM-475X	E.CAPACITOR.		
	C1208	NEA71EM-475X	E.CAPACITOR.		
	C1209	NEA71EM-475X	E.CAPACITOR.		
	C1210	NEA71EM-475X	E.CAPACITOR.		
	C1211	NEA71EM-475X	E.CAPACITOR.		
	C1212	NEA71EM-475X	E.CAPACITOR.		
	C1213	NEA71EM-475X	E.CAPACITOR.		
	C1214	NEA71EM-475X	E.CAPACITOR.		
	C1215	NEA71EM-475X	E.CAPACITOR.		
	C1216	NEA71EM-475X	E.CAPACITOR.		
	C1217	NEA71EM-475X	E.CAPACITOR.		
	C1218	NEA71EM-475X	E.CAPACITOR.		
	C1221	NCS31HJ-470X	C.CAPA. C.M		
	C1222	NCS31HJ-470X	C.CAPA. C.M		
	C1223	NCS31HJ-470X	C.CAPA. C.M		
	C1224	NCS31HJ-470X	C.CAPA. C.M		
	C1225	NCS31HJ-471X	C CAPACITOR		
	C1226	NCS31HJ-470X	C.CAPA. C.M		
	C1251	NCB31CK-103X	C CAPACITOR		
	C1252	NCB31CK-103X	C CAPACITOR		
	C2501	NCB31AK-474X	C CAPACITOR		
	C2503	NEA71EM-475X	E.CAPACITOR.		
	C2504	NEA71EM-475X	E.CAPACITOR.		
	C2505	NCS31HJ-560X	C CAPACITOR		
	C2506	NCS31HJ-560X	C CAPACITOR		
	C2507	NCS31HJ-560X	C CAPACITOR		
	C2508	NCS31HJ-560X	C CAPACITOR		
	C2509	NCF31CZ-104X	C CAPACITOR		
	C2510	NCF31CZ-104X	C CAPACITOR		
	C2511	NCB31AK-474X	C CAPACITOR		
	C2512	NCB31AK-474X	C CAPACITOR		
	C2513	NCB31CK-183X	C CAPACITOR		
	C2514	NCB31CK-183X	C CAPACITOR		
	C2515	NCB31HK-182X	C CAPACITOR		
	C2516	NCB31HK-182X	C CAPACITOR		
	C2517	NCB31HK-562X	C CAPACITOR		
	C2518	NCB31HK-562X	C CAPACITOR		
	C2519	NCF31CZ-104X	C CAPACITOR		
	C2520	NCF31CZ-104X	C CAPACITOR		
	C2521	NFV41CJ-103X	M CAPACITOR		
	C2522	NFV41CJ-103X	M CAPACITOR		
	C2523	NFV41HJ-272X	M CAPA C.M		
	C2524	NFV41HJ-272X	M CAPA C.M		
	C2525	NFV41CJ-392X	M CAPA C.M		
	C2526	NFV41CJ-392X	M CAPA C.M		
	C2527	NEA71EM-475X	E.CAPACITOR.		
	C2528	NEA71EM-475X	E.CAPACITOR.		
	C2529	NCF31CZ-104X	C CAPACITOR		
	C2530	NCF31CZ-104X	C CAPACITOR		

■ **Electrical parts list (DSP&audio board)** **Block No. 03**

⚠	Item	Parts number	Parts name	Remarks	Area
	C2531	NCS31HJ-560X	C CAPACITOR		
	C2532	NCS31HJ-560X	C CAPACITOR		
	C2533	NEA71HM-105X	E.CAPA. C.M.		
	C2534	NEA71HM-105X	E.CAPA. C.M.		
	C2539	NCF31CZ-104X	C CAPACITOR		
	C2540	NCF31CZ-104X	C CAPACITOR		
	C2541	NEA71EM-475X	E.CAPACITOR.		
	C2542	NEA71EM-475X	E.CAPACITOR.		
	C2553	NCB31HK-562X	C CAPACITOR		
	C2554	NCB31HK-562X	C CAPACITOR		
	C2555	NCF31CZ-104X	C CAPACITOR		
	C2556	NCF31CZ-104X	C CAPACITOR		
	C2561	NEA71HM-105X	E.CAPA. C.M.		
	C2562	NEA71HM-105X	E.CAPA. C.M.		
	C2563	NCS31HJ-220X	C CAPACITOR		
	C2564	NCS31HJ-220X	C CAPACITOR		
	C2569	NCF31CZ-104X	C CAPACITOR		
	C2570	NCF31CZ-104X	C CAPACITOR		
	C2571	NCB31CK-103X	C CAPACITOR		
	C2572	NCB31CK-103X	C CAPACITOR		
	C2573	NCB31HK-272X	C CAPACITOR		
	C2574	NCB31HK-272X	C CAPACITOR		
	C2575	NCB31HK-392X	C CAPACITOR		
	C2576	NCB31HK-392X	C CAPACITOR		
	C2577	NEA71EM-475X	E.CAPACITOR.		
	C2578	NEA71EM-475X	E.CAPACITOR.		
	C2579	NCF31CZ-104X	C CAPACITOR		
	C2580	NCF31CZ-104X	C CAPACITOR		
	C2581	NEA71HM-105X	E.CAPA. C.M.		
	C2582	NEA71CM-106X	E.CAPACITOR		
	C2583	NCS31HJ-220X	C CAPACITOR		
	C2584	NCS31HJ-560X	C CAPACITOR		
	C2589	NCF31CZ-104X	C CAPACITOR		
	C2590	NCF31CZ-104X	C CAPACITOR		
	C2591	NCB31CK-103X	C CAPACITOR		
	C2592	NCB31HK-223X	C CAPACITOR		
	C2593	NCB31HK-272X	C CAPACITOR		
	C2594	NCB31CK-104X	C CAPACITOR		
	C2595	NCB31HK-392X	C CAPACITOR		
	C2597	NEA71EM-475X	E.CAPACITOR.		
	C2598	NEA71EM-475X	E.CAPACITOR.		
	C2599	NCF31CZ-104X	C CAPACITOR		
	C2600	NCF31CZ-104X	C CAPACITOR		
	C2601	NEA71EM-475X	E.CAPACITOR.		
	C2602	NEA71EM-475X	E.CAPACITOR.		
	C2603	NEA71EM-475X	E.CAPACITOR.		
	C2604	NEA71EM-475X	E.CAPACITOR.		
	D 401	DAN202K-X	D.TRANSISTOR		
	D 403	DAN202K-X	D.TRANSISTOR		
	D 405	DAN202K-X	D.TRANSISTOR		
	IC151	BU4066BCF-X	IC	INPUT SELECT	
	IC153	M62446FP-X	IC	E.V0LUME	
	IC158	NJM4580M-X	IC	L/R OUT	
	IC159	NJM4580M-X	IC	SL/SR OUT	
	IC160	NJM4580M-X	IC	C/LFE OUT	
	IC401	AK4527VQ	IC	CODEC	
	IC402	RN5RZ33BA-X	IC		
	IC403	TC9446F-014	IC	DSP	
	IC404	AS7C31025-15TJX	IC	SRAM	
	IC406	UPD784215AGC103	IC	DSP MICOM	
	IC407	PQ3DZ53-X	IC	D3.3V REG	
	IC501	BA15218F-XE	IC	AUX IN	
	IC510	BA15218F-XE	IC	AUX IN	

⚠	Item	Parts number	Parts name	Remarks	Area
	IC511	BA15218F-XE	IC	AUX IN	
	IC521	BA15218F-XE	IC	L/R OUT	
	IC531	BA15218F-XE	IC	L/R OUT	
	IC561	BA15218F-XE	IC	SL/SR OUT	
	IC571	BA15218F-XE	IC	SL/SR OUT	
	IC581	BA15218F-XE	IC	C/LFE OUT	
	IC591	BA15218F-XE	IC	C/LFE OUT	
	J1101	QNN0385-001	PIN JACK ASSY	AUX IN	
	J1103	QND0079-001	DIN CONNECTOR	SYSTEM CONECT	
	K 401	NQR0319-001X	F.BEADS C.M		
	LC401	NQR0321-001X	EMI FILTER C.M		
	O 401	DTA144EKA-X	TRANSISTOR		
	O 402	DTC114YE-X	TRANSISTOR		
	O 403	DTC114YE-X	TRANSISTOR		
	O1131	IMX9-W	TRANSISTOR		
	O1133	IMX9-W	TRANSISTOR		
	O1135	IMX9-W	TRANSISTOR		
	O1137	2SD2114K/VW/-X	CHIP TRANSISTOR		
	O1251	DTA144EKA-X	TRANSISTOR		
	O1252	DTA144EKA-X	TRANSISTOR		
	O2501	DTA144EKA-X	TRANSISTOR		
	O2502	DTC144EKA-X	TRANSISTOR		
	O2521	IMX9-W	TRANSISTOR		
	O2561	IMX9-W	TRANSISTOR		
	O2581	IMX9-W	TRANSISTOR		
	R 401	NRSA63J-473X	MG RESISTOR		
	R 402	NRSA63J-473X	MG RESISTOR		
	R 403	NRSA63J-221X	MG RESISTOR		
	R 404	NRSA63J-221X	MG RESISTOR		
	R 405	NRSA63J-221X	MG RESISTOR		
	R 406	NRSA63J-221X	MG RESISTOR		
	R 407	NRSA63J-221X	MG RESISTOR		
	R 408	NRSA63J-221X	MG RESISTOR		
	R 409	NRSA63J-473X	MG RESISTOR		
	R 411	NRSA63J-473X	MG RESISTOR		
	R 412	NRSA63J-473X	MG RESISTOR		
	R 413	NRSA63J-822X	MG RESISTOR		
	R 414	NRSA63J-432X	MG RESISTOR		
	R 415	NRSA63J-221X	MG RESISTOR		
	R 423	NRSA63J-102X	MG RESISTOR		
	R 424	NRSA63J-563X	MG RESISTOR		
	R 425	NRSA63J-102X	MG RESISTOR		
	R 426	NRSA63J-103X	MG RESISTOR		
	R 427	NRSA63J-103X	MG RESISTOR		
	R 428	NRSA63J-472X	MG RESISTOR		
	R 429	NRSA63J-101X	MG RESISTOR		
	R 430	NRSA63J-103X	MG RESISTOR		
	R 431	NRSA63J-225X	MG RESISTOR		
	R 432	NRSA63J-472X	MG RESISTOR		
	R 441	NRSA63J-221X	MG RESISTOR		
	R 442	NRSA63J-221X	MG RESISTOR		
	R 443	NRSA63J-221X	MG RESISTOR		
	R 444	NRSA63J-221X	MG RESISTOR		
	R 445	NRSA63J-221X	MG RESISTOR		
	R 446	NRSA63J-221X	MG RESISTOR		
	R 447	NRSA63J-221X	MG RESISTOR		
	R 448	NRSA63J-221X	MG RESISTOR		
	R 449	NRSA63J-221X	MG RESISTOR		
	R 450	NRSA63J-221X	MG RESISTOR		
	R 451	NRSA63J-103X	MG RESISTOR		
	R 452	NRSA63J-432X	MG RESISTOR		
	R 453	NRSA63J-432X	MG RESISTOR		
	R 454	NRSA63J-432X	MG RESISTOR		

■ **Electrical parts list (DSP&audio board)** **Block No. 03**

⚠	Item	Parts number	Parts name	Remarks	Area
	R 455	NRSA63J-822X	MG RESISTOR		
	R 456	NRSA63J-822X	MG RESISTOR		
	R 457	NRSA63J-822X	MG RESISTOR		
	R 458	NRSA63J-103X	MG RESISTOR		
	R 459	NRSA63J-102X	MG RESISTOR		
	R 461	NRSA63J-432X	MG RESISTOR		
	R 462	NRSA63J-822X	MG RESISTOR		
	R 463	NRSA63J-0R0X	MG RESISTOR		
	R 464	NRSA63J-103X	MG RESISTOR		
	R 465	NRSA63J-103X	MG RESISTOR		
	R 467	NRSA63J-103X	MG RESISTOR		
	R 468	NRSA63J-103X	MG RESISTOR		
	R 471	NRSA63J-102X	MG RESISTOR		
	R 472	NRSA63J-102X	MG RESISTOR		
	R 473	NRSA63J-102X	MG RESISTOR		
	R 474	NRSA63J-102X	MG RESISTOR		
	R 475	NRSA63J-102X	MG RESISTOR		
	R 476	NRSA63J-102X	MG RESISTOR		
	R 481	NRSA63J-222X	MG RESISTOR		
	R 482	NRSA63J-103X	MG RESISTOR		
	R 483	NRSA63J-105X	MG RESISTOR		
	R1101	NRSA63J-471X	MG RESISTOR		
	R1102	NRSA63J-471X	MG RESISTOR		
	R1103	NRSA63J-104X	MG RESISTOR		
	R1104	NRSA63J-104X	MG RESISTOR		
	R1121	NRSA63J-103X	MG RESISTOR		
	R1122	NRSA63J-103X	MG RESISTOR		
	R1123	NRSA63J-103X	MG RESISTOR		
	R1131	NRSA63J-104X	MG RESISTOR		
	R1132	NRSA63J-104X	MG RESISTOR		
	R1133	NRSA63J-102X	MG RESISTOR		
	R1134	NRSA63J-102X	MG RESISTOR		
	R1135	NRSA63J-332X	MG RESISTOR		
	R1136	NRSA63J-332X	MG RESISTOR		
	R1137	NRSA63J-104X	MG RESISTOR		
	R1138	NRSA63J-104X	MG RESISTOR		
	R1139	NRSA63J-104X	MG RESISTOR		
	R1140	NRSA63J-104X	MG RESISTOR		
	R1141	NRSA63J-102X	MG RESISTOR		
	R1142	NRSA63J-102X	MG RESISTOR		
	R1143	NRSA63J-332X	MG RESISTOR		
	R1144	NRSA63J-332X	MG RESISTOR		
	R1145	NRSA63J-104X	MG RESISTOR		
	R1146	NRSA63J-104X	MG RESISTOR		
	R1147	NRSA63J-104X	MG RESISTOR		
	R1148	NRSA63J-104X	MG RESISTOR		
	R1149	NRSA63J-471X	MG RESISTOR		
	R1150	NRSA63J-102X	MG RESISTOR		
	R1151	NRSA63J-472X	MG RESISTOR		
	R1152	NRSA63J-332X	MG RESISTOR		
	R1153	NRSA63J-471X	MG RESISTOR		
	R1154	NRSA63J-472X	MG RESISTOR		
	R1155	NRSA63J-104X	MG RESISTOR		
	R1156	NRSA63J-104X	MG RESISTOR		
	R1157	NRSA63J-332X	MG RESISTOR		
	R1158	NRSA63J-104X	MG RESISTOR		
	R1161	NRSA63J-104X	MG RESISTOR		
	R1162	NRSA63J-104X	MG RESISTOR		
	R1163	NRSA63J-104X	MG RESISTOR		
	R1164	NRSA63J-104X	MG RESISTOR		
	R1165	NRSA63J-104X	MG RESISTOR		
	R1166	NRSA63J-104X	MG RESISTOR		
	R1167	NRSA63J-332X	MG RESISTOR		

⚠	Item	Parts number	Parts name	Remarks	Area
	R1168	NRSA63J-332X	MG RESISTOR		
	R1169	NRSA63J-393X	MG RESISTOR		
	R1170	NRSA63J-393X	MG RESISTOR		
	R1171	NRSA63J-332X	MG RESISTOR		
	R1172	NRSA63J-332X	MG RESISTOR		
	R1173	NRSA63J-393X	MG RESISTOR		
	R1174	NRSA63J-393X	MG RESISTOR		
	R1175	NRSA63J-332X	MG RESISTOR		
	R1176	NRSA63J-393X	MG RESISTOR		
	R1181	NRSA63J-124X	MG RESISTOR		
	R1182	NRSA63J-124X	MG RESISTOR		
	R1197	NRSA63J-474X	MG RESISTOR		
	R1251	NRSA63J-223X	MG RESISTOR		
	R1252	NRSA63J-223X	MG RESISTOR		
	R2501	NRSA63J-104X	MG RESISTOR		
	R2502	NRSA63J-104X	MG RESISTOR		
	R2503	NRSA63J-563X	MG RESISTOR		
	R2504	NRSA63J-563X	MG RESISTOR		
	R2505	NRSA63J-113X	MG RESISTOR		
	R2506	NRSA63J-113X	MG RESISTOR		
	R2507	NRSA63J-103X	MG RESISTOR		
	R2508	NRSA63J-103X	MG RESISTOR		
	R2509	NRSA63J-103X	MG RESISTOR		
	R2510	NRSA63J-103X	MG RESISTOR		
	R2511	NRSA63J-102X	MG RESISTOR		
	R2512	NRSA63J-102X	MG RESISTOR		
	R2513	NRSA63J-102X	MG RESISTOR		
	R2514	NRSA63J-102X	MG RESISTOR		
	R2515	NRSA63J-102X	MG RESISTOR		
	R2516	NRSA63J-102X	MG RESISTOR		
	R2517	NRSA63J-102X	MG RESISTOR		
	R2518	NRSA63J-102X	MG RESISTOR		
	R2519	NRSA63J-102X	MG RESISTOR		
	R2520	NRSA63J-102X	MG RESISTOR		
	R2521	NRSA63J-102X	MG RESISTOR		
	R2522	NRSA63J-102X	MG RESISTOR		
	R2523	NRSA63J-102X	MG RESISTOR		
	R2524	NRSA63J-102X	MG RESISTOR		
	R2525	NRSA63J-102X	MG RESISTOR		
	R2526	NRSA63J-102X	MG RESISTOR		
	R2527	NRSA63J-104X	MG RESISTOR		
	R2528	NRSA63J-104X	MG RESISTOR		
	R2529	NRSA63J-103X	MG RESISTOR		
	R2530	NRSA63J-103X	MG RESISTOR		
	R2531	NRSA63J-104X	MG RESISTOR		
	R2532	NRSA63J-104X	MG RESISTOR		
	R2533	NRSA63J-223X	MG RESISTOR		
	R2534	NRSA63J-223X	MG RESISTOR		
	R2535	NRSA63J-563X	MG RESISTOR		
	R2536	NRSA63J-563X	MG RESISTOR		
	R2537	NRSA63J-104X	MG RESISTOR		
	R2538	NRSA63J-104X	MG RESISTOR		
	R2561	NRSA63J-104X	MG RESISTOR		
	R2562	NRSA63J-104X	MG RESISTOR		
	R2563	NRSA63J-103X	MG RESISTOR		
	R2564	NRSA63J-103X	MG RESISTOR		
	R2565	NRSA63J-392X	MG RESISTOR		
	R2566	NRSA63J-392X	MG RESISTOR		
	R2567	NRSA63J-103X	MG RESISTOR		
	R2568	NRSA63J-103X	MG RESISTOR		
	R2571	NRSA63J-102X	MG RESISTOR		
	R2572	NRSA63J-102X	MG RESISTOR		
	R2573	NRSA63J-102X	MG RESISTOR		

■ **Electrical parts list (DSP&audio board)** **Block No. 03**

⚠	Item	Parts number	Parts name	Remarks	Area
	R2574	NRSA63J-102X	MG RESISTOR		
	R2575	NRSA63J-102X	MG RESISTOR		
	R2576	NRSA63J-102X	MG RESISTOR		
	R2577	NRSA63J-104X	MG RESISTOR		
	R2578	NRSA63J-104X	MG RESISTOR		
	R2579	NRSA63J-104X	MG RESISTOR		
	R2580	NRSA63J-104X	MG RESISTOR		
	R2581	NRSA63J-104X	MG RESISTOR		
	R2582	NRSA63J-104X	MG RESISTOR		
	R2583	NRSA63J-103X	MG RESISTOR		
	R2584	NRSA63J-124X	MG RESISTOR		
	R2585	NRSA63J-392X	MG RESISTOR		
	R2586	NRSA63J-123X	MG RESISTOR		
	R2587	NRSA63J-103X	MG RESISTOR		
	R2588	NRSA63J-103X	MG RESISTOR		
	R2590	NRSA63J-333X	MG RESISTOR		
	R2591	NRSA63J-102X	MG RESISTOR		
	R2592	NRSA63J-333X	MG RESISTOR		
	R2593	NRSA63J-102X	MG RESISTOR		
	R2594	NRSA63J-333X	MG RESISTOR		
	R2595	NRSA63J-102X	MG RESISTOR		
	R2596	NRSA63J-102X	MG RESISTOR		
	R2597	NRSA63J-104X	MG RESISTOR		
	R2598	NRSA63J-104X	MG RESISTOR		
	R2599	NRSA63J-104X	MG RESISTOR		
	R2600	NRSA63J-104X	MG RESISTOR		
	X 401	NAX0385-001X	CRYSTAL	22.5792MHZ	
	X 402	NAX0275-001X	1COSCIALLATOR	6.14MHZ	

■ **Electrical parts list (DVD servo board)** **Block No. 04**

⚠	Item	Parts number	Parts name	Remarks	Area
	C 1	NCB31CK-104X	C CAPACITOR		
	C 2	NEA70JM-226X	E CAPACITOR		
	C 3	NEA70JM-226X	E CAPACITOR		
	C 4	NCB31CK-104X	C CAPACITOR		
	C 5	NEX40JM-156X	E.CAPACITOR		
	C 6	NCB31CK-104X	C CAPACITOR		
	C 11	NEA70JM-107X	E.CAPACITOR		
	C 12	NCB31CK-104X	C CAPACITOR		
	C 15	NCB31CK-104X	C CAPACITOR		
	C 16	NBE20JM-106X	TS E CAP SVB20J		
	C 17	NCB31CK-104X	C CAPACITOR		
	C 101	NCB31HK-561X	C CAPACITOR		
	C 102	NCB31CK-104X	C CAPACITOR		
	C 103	NCB31CK-104X	C CAPACITOR		
	C 104	NCB31CK-104X	C CAPACITOR		
	C 105	NCB31CK-104X	C CAPACITOR		
	C 109	NEA70JM-476X	E.CAPACITOR		
	C 112	NEA70JM-476X	E.CAPACITOR		
	C 118	NCB21CK-154X	C.CAPACITOR		
	C 119	NCS31HJ-221X	C.CAPA. C.M		
	C 120	NCS31HJ-820X	C CAPACITOR		
	C 121	NCS31HJ-220X	C CAPACITOR		
	C 122	NCB31HK-271X	C CAPACITOR		
	C 123	NCB31CK-104X	C CAPACITOR		
	C 124	NCB31CK-104X	C CAPACITOR		
	C 125	NCB31CK-104X	C CAPACITOR		
	C 126	NEX40JM-566X	E CAPACITOR		
	C 127	NCB31HK-102X	C CAPACITOR		
	C 128	NCB31CK-104X	C CAPACITOR		
	C 130	NCB31CK-104X	C CAPACITOR		
	C 131	NCS31HJ-120X	C.CAPA. C.M		
	C 132	NCB31CK-104X	C CAPACITOR		
	C 133	NCB31HK-561X	C CAPACITOR		
	C 134	NCB31HK-561X	C CAPACITOR		
	C 135	NCB31CK-273X	C CAPACITOR		
	C 136	NCB31CK-473X	C CAPACITOR		
	C 138	NCB31CK-104X	C CAPACITOR		
	C 139	NCB31CK-104X	C CAPACITOR		
	C 140	NEA70JM-226X	E CAPACITOR		
	C 141	NCB31CK-104X	C CAPACITOR		
	C 143	NCB31CK-104X	C CAPACITOR		
	C 144	NCB31CK-104X	C CAPACITOR		
	C 145	NCB31CK-103X	C CAPACITOR		
	C 151	NEX40JM-156X	E.CAPACITOR		
	C 152	NEX40JM-156X	E.CAPACITOR		
	C 153	NCB31CK-104X	C CAPACITOR		
	C 159	NCB31CK-104X	C CAPACITOR		
	C 160	NCB31CK-104X	C CAPACITOR		
	C 161	NEA70GM-336X	E CAPACITOR		
	C 199	NCB31CK-103X	C CAPACITOR		
	C 202	NCB31HK-561X	C CAPACITOR		
	C 203	NCB31HK-561X	C CAPACITOR		
	C 204	NCB31HK-331X	C CAPACITOR		
	C 205	NCS31HJ-121X	C CAPACITOR		
	C 206	NCS31HJ-271X	C CAPACITOR		
	C 207	NCB31HK-471X	C CAPACITOR		
	C 208	NCB31CK-104X	C CAPACITOR		
	C 209	NCB31HK-102X	C CAPACITOR		
	C 210	NCB31HK-102X	C CAPACITOR		
	C 222	NCB31HK-562X	C CAPACITOR		
	C 223	NCB31HK-102X	C CAPACITOR		
	C 224	NCB31CK-104X	C CAPACITOR		
	C 225	NBE91CM-105X	E CAPACITOR		

⚠	Item	Parts number	Parts name	Remarks	Area
	C 227	NCB31HK-102X	C CAPACITOR		
	C 228	NCB31HK-102X	C CAPACITOR		
	C 237	NCB31CK-104X	C CAPACITOR		
	C 238	NCB31CK-104X	C CAPACITOR		
	C 239	NCB31CK-183X	C CAPACITOR		
	C 240	NCS31HJ-470X	C.CAPA. C.M		
	C 241	NCB31CK-103X	C CAPACITOR		
	C 242	NCB11CK-105X	C CAPACITOR		
	C 244	NCB31CK-104X	C CAPACITOR		
	C 245	NCB31CK-103X	C CAPACITOR		
	C 246	NCB31CK-104X	C CAPACITOR		
	C 247	NCB31CK-104X	C CAPACITOR		
	C 248	NCB21CK-154X	C.CAPACITOR		
	C 249	NCB31CK-104X	C CAPACITOR		
	C 250	NCB31CK-104X	C CAPACITOR		
	C 251	NCB31CK-104X	C CAPACITOR		
	C 252	NCB31CK-104X	C CAPACITOR		
	C 253	NCB31CK-104X	C CAPACITOR		
	C 254	NEA70GM-336X	E CAPACITOR		
	C 255	NCB31CK-104X	C CAPACITOR		
	C 256	NEA70GM-107X	E CAPACITOR		
	C 257	NCB11CK-105X	C CAPACITOR		
	C 258	NEA70GM-107X	E CAPACITOR		
	C 259	NCB11CK-105X	C CAPACITOR		
	C 260	NCB31HK-561X	C CAPACITOR		
	C 261	NCB31CK-104X	C CAPACITOR		
	C 262	NCB31CK-104X	C CAPACITOR		
	C 263	NCB31CK-104X	C CAPACITOR		
	C 264	NCB21CK-474X	C CAPACITOR		
	C 271	NCB31EK-332X	C CAPACITOR		
	C 272	NCB31HK-331X	C CAPACITOR		
	C 276	NCB31CK-104X	C CAPACITOR		
	C 277	NCB31CK-104X	C CAPACITOR		
	C 278	NCB31HK-102X	C CAPACITOR		
	C 279	NCB31HK-272X	C CAPACITOR		
	C 281	NCB31CK-103X	C CAPACITOR		
	C 283	NCB31CK-223X	C CAPACITOR		
	C 284	NCB31CK-473X	C CAPACITOR		
	C 288	NCB31CK-223X	C CAPACITOR		
	C 289	NCB31CK-104X	C CAPACITOR		
	C 291	NCB31CK-104X	C CAPACITOR		
	C 292	NEA70JM-226X	E CAPACITOR		
	C 293	NEA71CM-226X	E.CAPAP. C.M		
	C 301	NCB31CK-104X	C CAPACITOR		
	C 302	NCB31CK-104X	C CAPACITOR		
	C 303	NCB31CK-104X	C CAPACITOR		
	C 304	NCB31CK-104X	C CAPACITOR		
	C 305	NCB31CK-104X	C CAPACITOR		
	C 306	NCB31CK-104X	C CAPACITOR		
	C 307	NCB31CK-104X	C CAPACITOR		
	C 309	NCB31CK-104X	C CAPACITOR		
	C 310	NCB31CK-104X	C CAPACITOR		
	C 311	NCB31CK-104X	C CAPACITOR		
	C 312	NCS31HJ-180X	C CAPACITOR		
	C 313	NCS31HJ-180X	C CAPACITOR		
	C 314	NCB31CK-104X	C CAPACITOR		
	C 315	NCB31CK-104X	C CAPACITOR		
	C 316	NEA70GM-107X	E CAPACITOR		
	C 317	NCB11CK-105X	C CAPACITOR		
	C 318	NCB31CK-104X	C CAPACITOR		
	C 319	NCB31CK-104X	C CAPACITOR		
	C 320	NCB31CK-104X	C CAPACITOR		
	C 321	NCB31CK-104X	C CAPACITOR		

■ **Electrical parts list (DVD servo board)** **Block No. 04**

⚠	Item	Parts number	Parts name	Remarks	Area
	C 324	NCB31CK-104X	C CAPACITOR		
	C 326	NCB31CK-104X	C CAPACITOR		
	C 327	NEA70GM-107X	E CAPACITOR		
	C 341	NCB31CK-104X	C CAPACITOR		
	C 342	NCB31CK-104X	C CAPACITOR		
	C 343	NCB31CK-104X	C CAPACITOR		
	C 344	NCB31CK-104X	C CAPACITOR		
	C 345	NEA70JM-107X	E.CAPACITOR		
	C 346	NCB11CK-105X	C CAPACITOR		
	C 401	NCB31CK-104X	C CAPACITOR		
	C 402	NCB31CK-104X	C CAPACITOR		
	C 405	NCB31CK-104X	C CAPACITOR		
	C 406	NCB31CK-104X	C CAPACITOR		
	C 407	NCB31CK-104X	C CAPACITOR		
	C 408	NEA70JM-226X	E CAPACITOR		
	C 409	NCB31CK-104X	C CAPACITOR		
	C 410	NCB31CK-103X	C CAPACITOR		
	C 411	NCB31CK-104X	C CAPACITOR		
	C 412	NCB31CK-104X	C CAPACITOR		
	C 501	NCB31CK-104X	C CAPACITOR		
	C 502	NCB31CK-104X	C CAPACITOR		
	C 503	NCB31CK-104X	C CAPACITOR		
	C 504	NCB31CK-104X	C CAPACITOR		
	C 505	NCB31CK-104X	C CAPACITOR		
	C 506	NCB31CK-104X	C CAPACITOR		
	C 507	NCB31CK-104X	C CAPACITOR		
	C 508	NCB31CK-104X	C CAPACITOR		
	C 509	NCB31CK-104X	C CAPACITOR		
	C 510	NCB31CK-104X	C CAPACITOR		
	C 511	NCB31CK-104X	C CAPACITOR		
	C 512	NCB31CK-104X	C CAPACITOR		
	C 513	NCB31CK-104X	C CAPACITOR		
	C 514	NCB31CK-104X	C CAPACITOR		
	C 515	NCB31CK-104X	C CAPACITOR		
	C 516	NCB31CK-104X	C CAPACITOR		
	C 517	NCB31CK-104X	C CAPACITOR		
	C 518	NCB31CK-104X	C CAPACITOR		
	C 519	NCB31CK-104X	C CAPACITOR		
	C 520	NCB31CK-104X	C CAPACITOR		
	C 521	NCB31CK-104X	C CAPACITOR		
	C 522	NCB31CK-104X	C CAPACITOR		
	C 523	NCB31CK-104X	C CAPACITOR		
	C 524	NCB31CK-104X	C CAPACITOR		
	C 525	NCB31CK-104X	C CAPACITOR		
	C 526	NCB31CK-104X	C CAPACITOR		
	C 527	NCB31CK-104X	C CAPACITOR		
	C 528	NCB31CK-104X	C CAPACITOR		
	C 529	NCB31CK-104X	C CAPACITOR		
	C 530	NEA70JM-107X	E.CAPACITOR		
	C 531	NCB31CK-104X	C CAPACITOR		
	C 532	NCB31CK-104X	C CAPACITOR		
	C 533	NCB31CK-104X	C CAPACITOR		
	C 534	NEA70JM-107X	E.CAPACITOR		
	C 535	NCB31CK-104X	C CAPACITOR		
	C 536	NCB31CK-103X	C CAPACITOR		
	C 537	NEA70JM-226X	E CAPACITOR		
	C 538	NCB31CK-104X	C CAPACITOR		
	C 539	NCB31CK-104X	C CAPACITOR		
	C 540	NEA70JM-226X	E CAPACITOR		
	C 541	NCB31CK-104X	C CAPACITOR		
	C 542	NEA70JM-226X	E CAPACITOR		
	C 543	NCB31CK-104X	C CAPACITOR		
	C 556	NEA70JM-107X	E.CAPACITOR		
	C 557	NCB31CK-104X	C CAPACITOR		
	C 561	NCB31CK-104X	C CAPACITOR		
	C 562	NEA70JM-226X	E CAPACITOR		
	C 563	NCB31CK-104X	C CAPACITOR		
	C 564	NCB31CK-104X	C CAPACITOR		
	C 565	NCB31CK-104X	C CAPACITOR		
	C 566	NCB31CK-104X	C CAPACITOR		
	C 567	NEA70JM-226X	E CAPACITOR		
	C 568	NCB31CK-104X	C CAPACITOR		
	C 569	NEA70JM-226X	E CAPACITOR		
	C 570	NCB31CK-104X	C CAPACITOR		
	C 579	NCB31CK-103X	C CAPACITOR		
	CN101	QGF0501F3-40X	FFC/FPC CONNE	PU	
	CN501	QGB2027L1-10X	W TO B CONNE	POWER	
	CN502	QGB2027L1-22X	CONNECTOR	SYSTEM	
	CN503	QGB2027L1-10X	W TO B CONNE	VIDEO	
	D 199	MA3051/M/-X	ZENER DIODE		
	D 501	1SR154-400-X	DIODE		
	D 551	1SS355-X	DIODE		
	D 552	1SS355-X	DIODE		
	IC 1	RN5RZ33BA-X	IC		
	IC101	AN8702FH	IC		
	IC102	RN5RZ33BA-X	IC		
	IC201	MN67706ZY	IC		
	IC202	TC7WT125FU-X	IC(DIGITAL)		
	IC271	M56788FP-W	IC		
	IC301	MN103S13BDA	IC		
	IC311	TC7SH08FU-X	IC		
	IC312	TC7SH32FU-X	IC		
	IC321	TC7WH74FU-X	IC		
	IC322	TC74VHC00FT-X	IC		
	IC401	MN102L25GHW1	IC		
	IC402	K3N5C1000D-J007	IC C.M		
	IC403	AK93C65AF-X	IC		
	IC501	ZIVA3-PE0	IC		
	IC502	NAX0393-001X	CXO C.M	27MHZ	
	IC503	TC74VHC00FT-X	IC		
	IC504	K4S161622D-TC80	IC	SAMSUNG	
	IC505	K4S161622D-TC80	IC	SAMSUNG	
	IC554	MC44724AVFU	IC		
	K 102	NQR0007-002X	FERRITE BEADS		
	K 103	NQR0007-002X	FERRITE BEADS		
	K 201	NQR0007-002X	FERRITE BEADS		
	K 202	NQR0007-002X	FERRITE BEADS		
	K 203	NQR0007-002X	FERRITE BEADS		
	K 301	NQR0007-002X	FERRITE BEADS		
	K 302	NQR0007-002X	FERRITE BEADS		
	K 303	NQR0007-002X	FERRITE BEADS		
	K 401	NQR0007-002X	FERRITE BEADS		
	K 402	NQR0007-002X	FERRITE BEADS		
	K 501	NQR0007-002X	FERRITE BEADS		
	K 502	NQR0007-002X	FERRITE BEADS		
	K 503	NQR0007-002X	FERRITE BEADS		
	K 504	NQR0201-001X	FERRITE BEADS		
	K 505	NQR0269-001X	FERRITE BEADS		
	K 506	NQR0007-002X	FERRITE BEADS		
	K 507	NQR0007-002X	FERRITE BEADS		
	K 550	NQR0007-002X	FERRITE BEADS		
	K 551	NQR0007-002X	FERRITE BEADS		
	K 553	NQR0007-002X	FERRITE BEADS		
	K 554	NQR0007-002X	FERRITE BEADS		
	K 555	NQR0007-002X	FERRITE BEADS		
	K 556	NQR0007-002X	FERRITE BEADS		

■ **Electrical parts list (DVD servo board)** **Block No. 04**

⚠	Item	Parts number	Parts name	Remarks	Area
	K 557	NQR0007-002X	FERRITE BEADS		
	K 558	NQR0007-002X	FERRITE BEADS		
	K 561	NQR0007-002X	FERRITE BEADS		
	K 562	NQR0007-002X	FERRITE BEADS		
	K 563	NQR0007-002X	FERRITE BEADS		
	K 564	NQR0007-002X	FERRITE BEADS		
	K 565	NQR0007-002X	FERRITE BEADS		
	K 566	NQR0007-002X	FERRITE BEADS		
	K 567	NQR0007-002X	FERRITE BEADS		
	K 568	NQR0007-002X	FERRITE BEADS		
	K 569	NQR0007-002X	FERRITE BEADS		
	K 570	NQR0007-002X	FERRITE BEADS		
	K 571	NQR0007-002X	FERRITE BEADS		
	K 572	NQR0007-002X	FERRITE BEADS		
	K 574	NQR0007-002X	FERRITE BEADS		
	K 575	NQR0007-002X	FERRITE BEADS		
	K 576	NQR0007-002X	FERRITE BEADS		
	K 577	NQR0007-002X	FERRITE BEADS		
	K 578	NQR0007-002X	FERRITE BEADS		
	K 579	NQR0007-002X	FERRITE BEADS		
	L 1	NQL044K-100X	INDUCTOR		
	O 1	2SD2150/RS/-W	POW TRANSISTOR		
	O 101	2SB1424/QR/-X	TRANSISTOR		
	O 102	2SB1424/QR/-X	TRANSISTOR		
	O 275	DTC144EE-X	TRANSISTOR		
	R 1	NRSA63J-100X	MG RESISTOR		
	R 103	NRS125J-270X	MG RESISTOR		
	R 104	NRS125J-270X	MG RESISTOR		
	R 107	NRSA63J-0R0X	MG RESISTOR		
	R 108	NRSA63J-183X	MG RESISTOR		
	R 109	NRSA63J-0R0X	MG RESISTOR		
	R 110	NRSA63J-273X	MG RESISTOR		
	R 111	NRSA63J-0R0X	MG RESISTOR		
	R 112	NRSA63J-273X	MG RESISTOR		
	R 113	NRSA63J-682X	MG RESISTOR		
	R 114	NRSA63J-102X	MG RESISTOR		
	R 115	NRVA63D-243X	MG RESISTOR		
	R 116	NRSA63J-393X	MG RESISTOR		
	R 117	NRSA63J-123X	MG RESISTOR		
	R 118	NRSA63J-223X	MG RESISTOR		
	R 121	NRSA63J-0R0X	MG RESISTOR		
	R 122	NRSA63J-0R0X	MG RESISTOR		
	R 123	NRSA63J-0R0X	MG RESISTOR		
	R 124	NRSA63J-0R0X	MG RESISTOR		
	R 125	NRSA63J-0R0X	MG RESISTOR		
	R 126	NRSA63J-0R0X	MG RESISTOR		
	R 127	NRSA63J-222X	MG RESISTOR		
	R 128	NRSA63J-105X	MG RESISTOR		
	R 129	NRSA63J-105X	MG RESISTOR		
	R 131	NRSA63J-822X	MG RESISTOR		
	R 132	NRSA63J-103X	MG RESISTOR		
	R 144	NRSA63J-333X	MG RESISTOR		
	R 145	NRSA63J-103X	MG RESISTOR		
	R 152	NRS125J-1R0X	MG RESISTOR		
	R 153	NRS125J-4R7X	MG RESISTOR		
	R 155	NRSA63J-0R0X	MG RESISTOR		
	R 156	NRSA63J-333X	MG RESISTOR		
	R 160	NRSA63J-0R0X	MG RESISTOR		
	R 161	NRSA63J-0R0X	MG RESISTOR		
	R 162	NRSA63J-0R0X	MG RESISTOR		
	R 163	NRSA63J-0R0X	MG RESISTOR		
	R 166	NRSA63J-182X	MG RESISTOR		
	R 202	NRSA63J-473X	MG RESISTOR		

⚠	Item	Parts number	Parts name	Remarks	Area
	R 203	NRSA63J-473X	MG RESISTOR		
	R 204	NRSA63J-473X	MG RESISTOR		
	R 205	NRSA63J-473X	MG RESISTOR		
	R 208	NRSA63J-473X	MG RESISTOR		
	R 209	NRSA63J-123X	MG RESISTOR		
	R 210	NRSA63J-473X	MG RESISTOR		
	R 211	NRSA63J-273X	MG RESISTOR		
	R 212	NRSA63J-273X	MG RESISTOR		
	R 213	NRSA63J-562X	MG RESISTOR		
	R 214	NRSA63J-123X	MG RESISTOR		
	R 215	NRSA63J-105X	MG RESISTOR		
	R 218	NRSA63J-153X	MG RESISTOR		
	R 219	NRSA63J-473X	MG RESISTOR		
	R 220	NRSA63J-473X	MG RESISTOR		
	R 223	NRSA63J-473X	MG RESISTOR		
	R 224	NRSA63J-0R0X	MG RESISTOR		
	R 225	NRSA63J-682X	MG RESISTOR		
	R 227	NRSA63J-102X	MG RESISTOR		
	R 228	NRSA63J-183X	MG RESISTOR		
	R 229	NRSA63J-273X	MG RESISTOR		
	R 230	NRSA63J-273X	MG RESISTOR		
	R 232	NRSA63J-472X	MG RESISTOR		
	R 233	NRSA63J-472X	MG RESISTOR		
	R 234	NRSA63J-472X	MG RESISTOR		
	R 235	NRSA63J-0R0X	MG RESISTOR		
	R 237	NRSA63J-221X	MG RESISTOR		
	R 238	NRSA63J-221X	MG RESISTOR		
	R 239	NRSA63J-221X	MG RESISTOR		
	R 240	NRSA63J-221X	MG RESISTOR		
	R 241	NRSA63J-221X	MG RESISTOR		
	R 242	NRSA63J-102X	MG RESISTOR		
	R 243	NRSA63J-102X	MG RESISTOR		
	R 244	NRSA63J-102X	MG RESISTOR		
	R 245	NRSA63J-102X	MG RESISTOR		
	R 246	NRSA63J-102X	MG RESISTOR		
	R 248	NRSA63J-473X	MG RESISTOR		
	R 249	NRSA63J-473X	MG RESISTOR		
	R 250	NRSA63J-473X	MG RESISTOR		
	R 253	NRS125J-4R7X	MG RESISTOR		
	R 255	NRSA63J-123X	MG RESISTOR		
	R 256	NRSA63J-0R0X	MG RESISTOR		
	R 257	NRSA63J-0R0X	MG RESISTOR		
	R 271	NRSA63J-563X	MG RESISTOR		
	R 272	NRSA63J-103X	MG RESISTOR		
	R 273	NRS125J-1R0X	MG RESISTOR		
	R 274	NRSA63J-0R0X	MG RESISTOR		
	R 275	NRSA63J-103X	MG RESISTOR		
	R 276	NRSA63J-103X	MG RESISTOR		
	R 277	NRSA63J-103X	MG RESISTOR		
	R 278	NRSA63J-103X	MG RESISTOR		
	R 279	NRSA63J-103X	MG RESISTOR		
	R 280	NRSA63J-103X	MG RESISTOR		
	R 282	NRSA63J-183X	MG RESISTOR		
	R 283	NRSA63J-103X	MG RESISTOR		
	R 284	NRSA63J-472X	MG RESISTOR		
	R 285	NRSA63J-103X	MG RESISTOR		
	R 286	NRSA63J-103X	MG RESISTOR		
	R 287	NRSA63J-103X	MG RESISTOR		
	R 288	NRSA63J-103X	MG RESISTOR		
	R 289	NRSA63J-103X	MG RESISTOR		
	R 290	NRSA63J-103X	MG RESISTOR		
	R 292	NRSA63J-223X	MG RESISTOR		
	R 295	NRSA63J-103X	MG RESISTOR		

■ **Electrical parts list (DVD servo board)** **Block No. 04**

⚠	Item	Parts number	Parts name	Remarks	Area
	R 296	NRSA63J-103X	MG RESISTOR		
	R 297	NRS125J-1R0X	MG RESISTOR		
	R 301	NRSA63J-473X	MG RESISTOR		
	R 302	NRSA63J-473X	MG RESISTOR		
	R 303	NRSA63J-473X	MG RESISTOR		
	R 304	NRSA63J-473X	MG RESISTOR		
	R 305	NRSA63J-473X	MG RESISTOR		
	R 306	NRSA63J-473X	MG RESISTOR		
	R 307	NRSA63J-473X	MG RESISTOR		
	R 308	NRSA63J-473X	MG RESISTOR		
	R 309	NRSA63J-103X	MG RESISTOR		
	R 310	NRSA63J-102X	MG RESISTOR		
	R 311	NRSA63J-102X	MG RESISTOR		
	R 312	NRSA63J-102X	MG RESISTOR		
	R 316	NRSA63J-105X	MG RESISTOR		
	R 317	NRSA63J-0R0X	MG RESISTOR		
	R 318	NRSA63J-0R0X	MG RESISTOR		
	R 322	NRSA63J-473X	MG RESISTOR		
	R 324	NRSA63J-473X	MG RESISTOR		
	R 328	NRSA63J-473X	MG RESISTOR		
	R 342	NRSA63J-0R0X	MG RESISTOR		
	R 343	NRSA63J-102X	MG RESISTOR		
	R 345	NRSA63J-562X	MG RESISTOR		
	R 346	NRSA63J-472X	MG RESISTOR		
	R 347	NRSA63J-102X	MG RESISTOR		
	R 348	NRSA63J-102X	MG RESISTOR		
	R 349	NRSA63J-102X	MG RESISTOR		
	R 350	NRSA63J-102X	MG RESISTOR		
	R 364	NRSA63J-0R0X	MG RESISTOR		
	R 403	NRSA63J-472X	MG RESISTOR		
	R 405	NRSA63J-472X	MG RESISTOR		
	R 408	NRSA63J-472X	MG RESISTOR		
	R 410	NRSA63J-0R0X	MG RESISTOR		
	R 411	NRSA63J-472X	MG RESISTOR		
	R 412	NRSA63J-103X	MG RESISTOR		
	R 413	NRSA63J-472X	MG RESISTOR		
	R 414	NRSA63J-472X	MG RESISTOR		
	R 415	NRSA63J-472X	MG RESISTOR		
	R 416	NRSA63J-472X	MG RESISTOR		
	R 417	NRSA63J-472X	MG RESISTOR		
	R 418	NRSA63J-472X	MG RESISTOR		
	R 423	NRSA63J-0R0X	MG RESISTOR		
	R 424	NRSA63J-0R0X	MG RESISTOR		
	R 431	NRSA63J-472X	MG RESISTOR		
	R 432	NRSA63J-472X	MG RESISTOR		
	R 501	NRSA63J-102X	MG RESISTOR		
	R 502	NRSA63J-222X	MG RESISTOR		
	R 504	NRSA63J-330X	MG RESISTOR		
	R 505	NRSA63J-330X	MG RESISTOR		
	R 506	NRSA63J-330X	MG RESISTOR		
	R 507	NRSA63J-330X	MG RESISTOR		
	R 508	NRSA63J-330X	MG RESISTOR		
	R 509	NRSA63J-330X	MG RESISTOR		
	R 510	NRSA63J-330X	MG RESISTOR		
	R 511	NRSA63J-330X	MG RESISTOR		
	R 512	NRSA63J-330X	MG RESISTOR		
	R 513	NRSA63J-330X	MG RESISTOR		
	R 514	NRSA63J-330X	MG RESISTOR		
	R 515	NRSA63J-330X	MG RESISTOR		
	R 516	NRSA63J-330X	MG RESISTOR		
	R 517	NRSA63J-330X	MG RESISTOR		
	R 518	NRSA63J-330X	MG RESISTOR		
	R 519	NRSA63J-330X	MG RESISTOR		

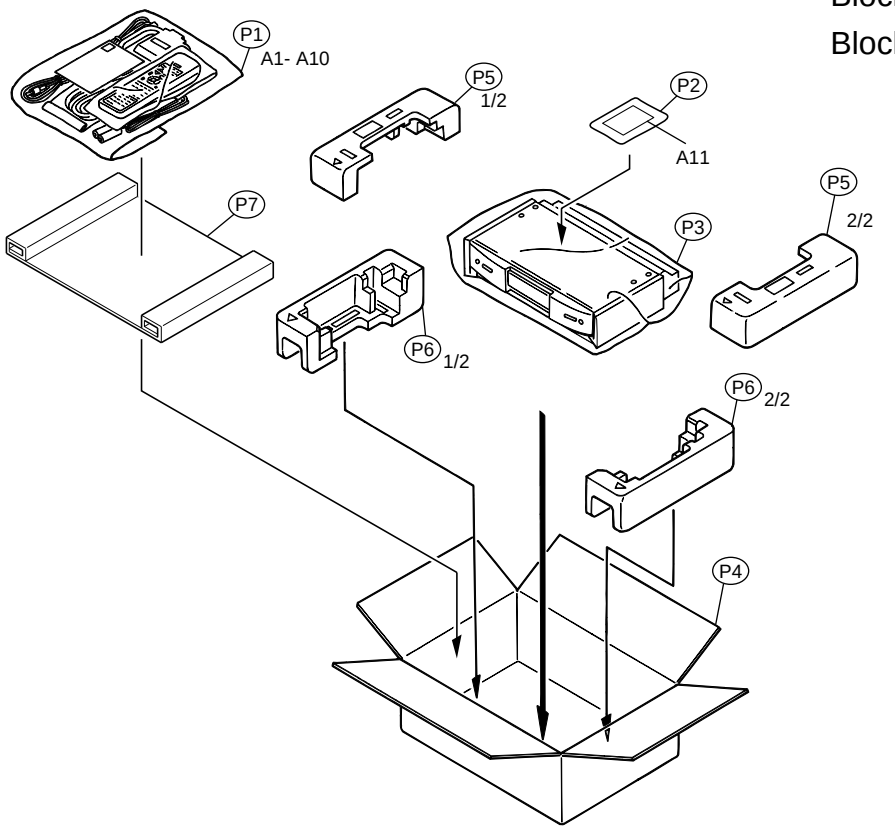
⚠	Item	Parts number	Parts name	Remarks	Area
	R 520	NRSA63J-330X	MG RESISTOR		
	R 521	NRSA63J-330X	MG RESISTOR		
	R 522	NRSA63J-330X	MG RESISTOR		
	R 523	NRSA63J-181X	MG RESISTOR		
	R 524	NRSA63J-181X	MG RESISTOR		
	R 525	NRSA63J-181X	MG RESISTOR		
	R 526	NRSA63J-181X	MG RESISTOR		
	R 527	NRSA63J-181X	MG RESISTOR		
	R 528	NRSA63J-181X	MG RESISTOR		
	R 529	NRSA63J-181X	MG RESISTOR		
	R 530	NRSA63J-181X	MG RESISTOR		
	R 531	NRSA63J-330X	MG RESISTOR		
	R 532	NRSA63J-0R0X	MG RESISTOR		
	R 533	NRSA63J-330X	MG RESISTOR		
	R 534	NRSA63J-330X	MG RESISTOR		
	R 535	NRSA63J-330X	MG RESISTOR		
	R 536	NRSA63J-330X	MG RESISTOR		
	R 537	NRSA63J-330X	MG RESISTOR		
	R 538	NRSA63J-330X	MG RESISTOR		
	R 539	NRSA63J-330X	MG RESISTOR		
	R 540	NRSA63J-330X	MG RESISTOR		
	R 541	NRSA63J-0R0X	MG RESISTOR		
	R 542	NRSA63J-0R0X	MG RESISTOR		
	R 543	NRSA63J-0R0X	MG RESISTOR		
	R 544	NRSA63J-0R0X	MG RESISTOR		
	R 545	NRSA63J-472X	MG RESISTOR		
	R 547	NRSA63J-222X	MG RESISTOR		
	R 548	NRSA63J-332X	MG RESISTOR		
	R 550	NRSA63J-0R0X	MG RESISTOR		
	R 564	NRVA63D-152X	MG RESISTOR		
	R 565	NRVA63D-332X	MF RESISTOR		
	R 571	NRSA63J-100X	MG RESISTOR		
	R 572	NRSA63J-181X	MG RESISTOR		
	R 573	NRSA63J-181X	MG RESISTOR		
	R 574	NRSA63J-181X	MG RESISTOR		
	R 575	NRSA63J-181X	MG RESISTOR		
	R 576	NRSA63J-181X	MG RESISTOR		
	R 577	NRSA63J-181X	MG RESISTOR		
	R 578	NRSA63J-181X	MG RESISTOR		
	R 579	NRSA63J-181X	MG RESISTOR		
	R 580	NRSA63J-181X	MG RESISTOR		
	R 581	NRSA63J-101X	MG RESISTOR		
	R 582	NRSA63J-181X	MG RESISTOR		
	R 586	NRVA63D-122X	MG RESISTOR		
	R 587	NRVA63D-122X	MG RESISTOR		
	R 588	NRVA63D-102X	CMF RESISTOR		
	R 589	NRVA63D-102X	CMF RESISTOR		
	X 301	NAX0375-001X	CRYSTAL	16.9344MHZ	
	X 401	NAX0331-001X	C RESONATOR		

■ **Electrical parts list (Connection board)** **Block No. 05**

⚠	Item	Parts number	Parts name	Remarks	Area
	C 13	NCS31HJ-101X	C.CAPACITOR		
	CN 10	QGF0501F4-40X	FFC/FPC CONNE	FOR MAIN	
	CN 12	QGF1012F1-30X	FPC CONNE	FOR P.U	
	IC 1	GP2S60B-X	IC(PHOTO COUPLE		
	K 10	NQR0265-003X	FERRITE BEADS		
	K 11	NQR0265-003X	FERRITE BEADS		
	K 12	NQR0265-003X	FERRITE BEADS		
	K 13	NQR0265-003X	FERRITE BEADS		
	K 14	NQR0265-003X	FERRITE BEADS		
	K 15	NQR0265-003X	FERRITE BEADS		
	K 16	NQR0265-003X	FERRITE BEADS		
	K 17	NQR0265-003X	FERRITE BEADS		
	K 18	NQR0265-003X	FERRITE BEADS		
	R 10	NRSA63J-391X	MG RESISTOR		
	R 11	NRSA63J-910X	MG RESISTOR		
	R 12	NRSA63J-911X	MG RESISTOR		
	S 10	QSW0620-001	DETECT SWITCH	REST SW	
	S 11	NSW0127-001X	SLIDE SWITCH	SHORT SW	

Packing materials and accessories parts list

Block No. M 3 M M
Block No. M 4 M M



■ Parts list (Packing)

Block No. M3MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	P 1	QPA03004507P	POLY BAG	1		
	P 2	QPA01702503P	POLY BAG	1		
	P 3	QPC05005015P	POLY BAG	1	FOR SET	
	P 4	LV30580-037A	PACKING CASE	1		
	P 5	LV20893-001A	CUSHION(TOP)	1	(L)	
	P 6	LV20894-001A	CUSHION(BOTTOM)	1	(R)	
	P 7	LV42253-001A	CARTON SPACER	1		

■ Parts list (Accessories)

Block No. M4MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	A 1	LVT0562-006A	INST.BOOK	1	SWE,FIN,DAN,GER,FRE	EN
					SPA,ITA	EN
		LVT0562-004A	INST BOOK	1	ENG	B
		LVT0562-005A	INST.BOOK	1	GER,FRE,DUT	E
	A 2	E43486-340A	BS=SAFETY INST	1		B
	A 3	VNA3000-204	REGIST.CARD	1		B
⚠	A 4	QMPL080-183-JC	POWER CORD	1		EN
⚠		QMPL080-183-JC	POWER CORD	1		E
⚠		QMPP060-183-JD	POWER CORD	1		B
	A 5	QAM0239-003	MINI DIN CABLE	1		
	A 6	QAM0236-001	VIDEO CABLE	1		
	A 7	EWP503-001C	ANT.WIRE	1	FM ANT	
	A 8	QAL0014-001	AM LOOP ANT	1	AM ANT	
	A 9	RM-STHA9R	REMOCON UNIT	1		
	A 10	----------	BATTERY	2	FOR REMOCON	
	A 11	BT-54008-2	WARRANTY CARD	1		

PARTS LIST

[SP-THA9]

* All printed circuit boards and its assemblies are not available as service parts.

Area suffix

B ---------- U.K.
E ---------- Continental Europe
EN ---------- Northern Europe

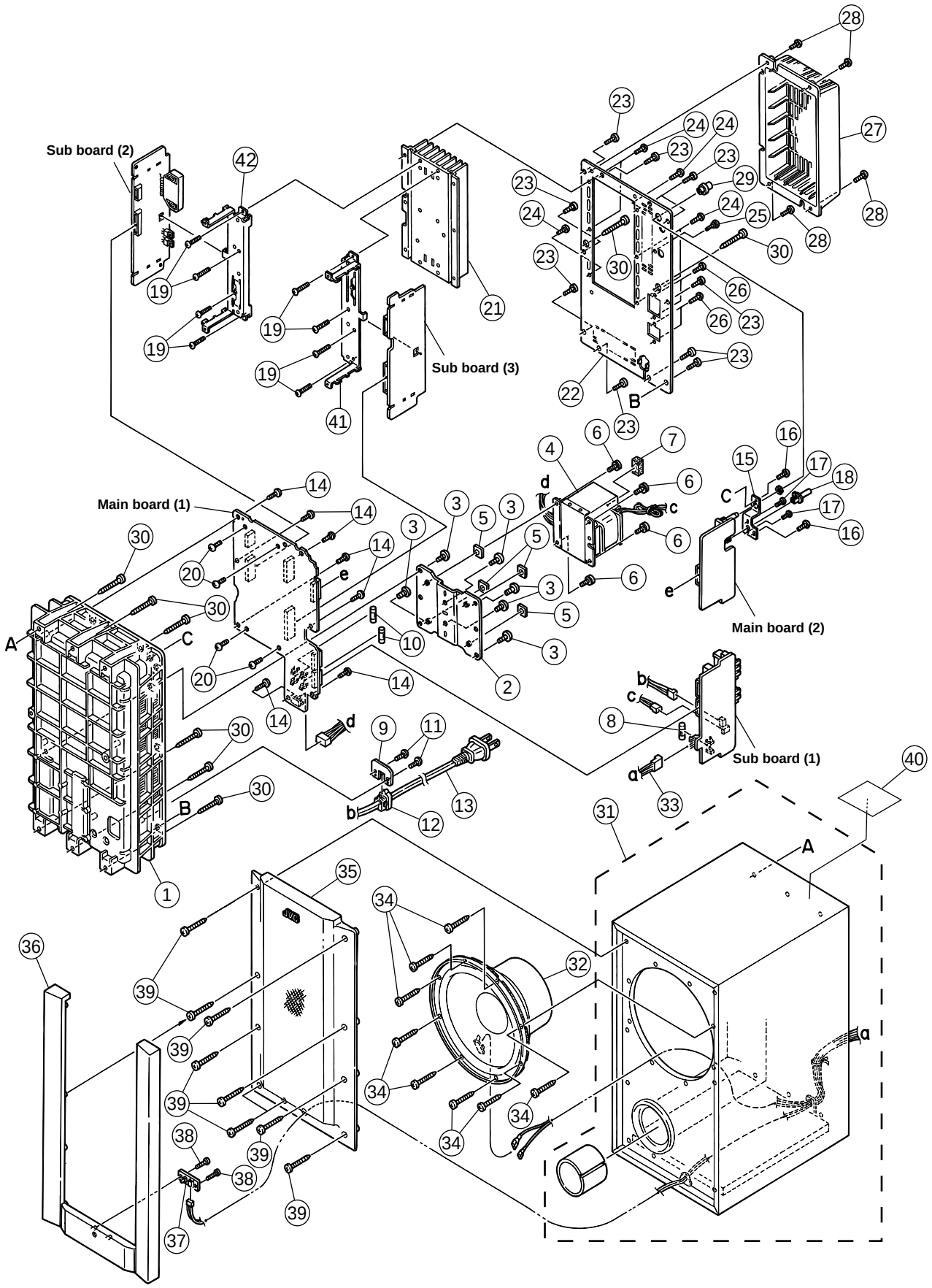
- Contents -

Exploded view of general assembly and parts list (SP-THA9) ---------- 3-24
Electrical parts list ---------- 3-26
Packing materials and accessories parts list ---------- 3-31

Exploded view of general assembly and parts list

(SP-THA9)

Block No. M 5 M M



■ Parts list (SP-THA9 General assembly)

Block No. M5MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	1	LV10447-001A	MOLD BASE	1		
	2	LV31723-001A	TRANS BRACKET	1		
	3	QYSBSF4008Z	SCREW	6	FOR TRANS BKT	
⚠	4	QQT0297-003	P.TRANS	1		
	5	E406309-002	SPACER	4		
	6	QYSDSTL4010E	SPECIAL SCREW	4		
	7	LV30225-078A	SPACER	1		
⚠	8	QMF51E2-2R5-J1	FUSE	1		
	9	LV42032-001A	AC BRACKET	1		
⚠	10	QMFZ031-8R0-J1	FUSE	2		
	11	QYSBSF3008Z	SCREW	2		
⚠	12	QHS3771-108	CORD STOPPER	1		
⚠	13	QMPK190-200-JC	POWER CORD	1		E
⚠		QMPK190-200-JC	POWER CORD	1		EN
⚠		QMPN160-200-JD	POWER CORD	1		B
	14	QYSBSF3008Z	SCREW	7		
	15	LV31756-001A	VOLUME BRACKET	1		
	16	QYSBSF3008Z	SCREW	2	FOR BOLUME BKT	
	17	QYSBST3006Z	T.SCREW	2	FOR PUSH SW	
	18	E407321-002SM	PUSH BUTTON	1		
	19	QYSBSG3016Z	T.SCREW	8	FOR TRTO H/S	
	20	QYSBSG3008E	T.SCREW	4	MOTHER TO H/SBK	
⚠	21	LV20656-002A	HEAT SINK	1		
	22	LV20895-003A	REAR PANEL	1		
	23	QYSDSF3008M	SCREW	10	TO MOLD BASE	
	24	QYSBSGY3008E	SPECIAL SCREW	6	FOR H/S	
	25	E73562-003	SPECIAL SCREW	1	DIN.REAR	
	26	QYSBSGY3008E	SPECIAL SCREW	4	FOR SPK	
	27	LV20655-001A	H.S.COVER	1		
	28	QYSBSG3008M	T.SCREW	4		
	29	LV30734-002A	KNOB	1		
	30	QYSDSA4025M	T.SCREW	8		
	31	AA000020-02	CABI/SPK ASSY	1	JVC BRAND	
	32	CR200002-01	SPEAKER	1		
	33	6100058411	CONN.WIRE ASSY	1		
	34	7005942502	SCREW	8		
	35	9925001311	SARAN BOARD	1		
	36	5300014001	BAFFLE	1		
	37	6600007421	L.E.D.INDICATOR	1		
	38	7004690801	TAPPING SCREW	2		
	39	7005942502	SCREW	9		
	40	6000167301	CAUTION LABEL	1		
	41	LV31722-003A	P.TR HOLDER	1		
	42	LV31722-002A	P.TR HOLDER	1		

■ **Electrical parts list (SP-THA9 Main board)** **Block No. 06**

⚠	Item	Parts number	Parts name	Remarks	Area
	C 100	QTE1H06-475Z	E CAPACITOR		
	C 101	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
	C 102	QTE1H06-475Z	E CAPACITOR		
	C 103	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
	C 104	QETN1HM-105Z	E CAPACITOR	1.0MF 20% 50V	
	C 105	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
	C 106	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 107	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 108	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 109	QTE1H06-475Z	E CAPACITOR		
	C 110	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 111	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 112	QTE1H06-475Z	E CAPACITOR		
	C 113	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 114	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 115	QETN1HM-105Z	E CAPACITOR	1.0MF 20% 50V	
	C 116	QETN1HM-106Z	E CAPACITOR	10MF 20% 50V	
	C 118	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 119	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 120	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 121	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 122	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 123	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 124	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 125	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 126	QCSB1HJ-100Y	C CAPACITOR	10PF 5% 50V	
	C 128	QETN1HM-475Z	E CAPACITOR	4.7MF 20% 50V	
	C 129	QETN1HM-475Z	E CAPACITOR	4.7MF 20% 50V	
	C 500	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 501	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 502	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 503	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 504	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 505	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 506	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 507	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 508	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 509	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 510	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 511	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 512	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 513	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 514	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 515	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 516	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 517	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
	C 518	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 519	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
	C 520	QEZ0223-478	E CAPACITER	4700MF	
	C 521	QEZ0223-478	E CAPACITER	4700MF	
	C 522	QETM1EM-688	E CAPACITOR	6800MF 20% 25V	
	C 523	QETM1EM-688	E CAPACITOR	6800MF 20% 25V	
	C 524	QFLC2AJ-104Z	M CAPACITOR	.10MF 5% 100V	
	C 525	QFLC2AJ-104Z	M CAPACITOR	.10MF 5% 100V	
	C 526	QFLC2AJ-104Z	M CAPACITOR	.10MF 5% 100V	
	C 527	QFLC2AJ-104Z	M CAPACITOR	.10MF 5% 100V	
	C 528	QFLC2AJ-104Z	M CAPACITOR	.10MF 5% 100V	
	C 529	QFLC2AJ-104Z	M CAPACITOR	.10MF 5% 100V	
	C 530	QETN1CM-227Z	E CAPACITOR	220MF 20% 16V	
	C 531	QETN1HM-475Z	E CAPACITOR	4.7MF 20% 50V	
	C 532	QETN1HM-106Z	E CAPACITOR	10MF 20% 50V	
	C 533	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
	C 550	QETN1HM-335Z	E CAPACITOR	3.3MF 20% 50V	

⚠	Item	Parts number	Parts name	Remarks	Area
	C 551	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 552	QETN1HM-475Z	E CAPACITOR	4.7MF 20% 50V	
	C 553	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 554	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 555	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 556	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 557	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 558	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	CN101	QGB2510K2-12	CONNECTOR		
	CN104	QGA3901C1-05	5P CONNECTOR		
	CN201	QGB2510J1-12	CONNECTOR		
	CN202	QGB2510J1-06	CONNECTOR		
	CN203	QGB2510J1-14	CONNECTOR		
	CN205	QGB2510J1-20	CONNECTOR		
	CN206	QGB2510J1-14	CONNECTOR		
	CN210	QGB2510J1-10	CONNECTOR		
	CN211	QGB2510J1-12	CONNECTOR		
	D 500	1SS133-T2	SI DIODE		
	D 501	1SS133-T2	SI DIODE		
	D 502	MTZJ5.1C-T2	ZENER DIODE		
	D 503	1SS133-T2	SI DIODE		
	D 504	1SS133-T2	SI DIODE		
	D 505	1SS133-T2	SI DIODE		
	D 506	MTZJ30C-T2	ZENER DIODE		
	D 508	MTZJ5.1B-T2	ZENER DIODE		
	D 509	MTZJ12C-T2	ZENER DIODE		
	D 510	MTZJ12C-T2	ZENER DIODE		
⚠	D 511	1N5402M-20	DIODE		
⚠	D 512	1N5402M-20	DIODE		
⚠	D 513	1N5402M-20	DIODE		
⚠	D 514	1N5402M-20	DIODE		
⚠	D 515	6A20G-E4	DIODE		
⚠	D 516	6A20G-E4	DIODE		
⚠	D 517	6A20G-E4	DIODE		
⚠	D 518	6A20G-E4	DIODE		
	D 519	1SS133-T2	SI DIODE		
	D 520	1SS133-T2	SI DIODE		
	D 521	1SS133-T2	SI DIODE		
	D 522	1SS133-T2	SI DIODE		
	D 523	MTZJ15C-T2	Z DIODE		
	D 524	MTZJ6.2B-T2	ZENER DIODE		
	D 525	MTZJ6.2B-T2	ZENER DIODE		
	D 526	MTZJ15C-T2	Z DIODE		
	D 527	1SS133-T2	SI DIODE		
	D 528	1SS133-T2	SI DIODE		
	D 530	1SS133-T2	SI DIODE		
	D 531	1SS133-T2	SI DIODE		
	D 532	MTZJ30C-T2	ZENER DIODE		
	D 533	MTZJ6.2B-T2	ZENER DIODE		
	D 534	1SS133-T2	SI DIODE		
	D 535	MTZJ15C-T2	Z DIODE		
	D 536	1SS133-T2	SI DIODE		
	IC100	BA3121	IC		
	IC101	BA3121	IC		
	IC102	BA3121	IC		
	IC103	BA15218N	IC		
	IC108	BA15218N	IC		
	IC109	BA15218N	IC		
	IC110	BA15218N	IC		
	J 100	QND0079-001	DIN CONNECTOR		
	K 100	QQR0621-001Z	FERRITE BEADS		
	K 101	QQR0621-001Z	FERRITE BEADS		
	Q 500	KRA104M-T	D.TR.I.M		

■ **Electrical parts list (SP-THA9 Main board)** **Block No. 06**

⚠	Item	Parts number	Parts name	Remarks	Area
	O 501	KRC102M-T	D.TRANSISTOR		
	O 502	KTA1267/YG/-T	TRANSISTOR		
	Q 503	KRC102M-T	D.TRANSISTOR		
	O 504	KTC3199/GL/-T	TRANSISTOR		
	Q 505	KRC102M-T	D.TRANSISTOR		
⚠	O 506	2SD2037/EF/-T	TRANSISTOR		
⚠	Q 507	2SA1359/OY/	TRANSISTOR		
	O 508	KTC3199/GL/-T	TRANSISTOR		
	Q 509	KTC3199/GL/-T	TRANSISTOR		
	O 510	KRA102M-T	D.TRANSISTOR		
	O 511	KTC3199/GL/-T	TRANSISTOR		
	O 512	KTC3199/GL/-T	TRANSISTOR		
	O 513	KRC104M-T	D.TR.I.M		
	O 514	DTC115ESA-T	D.TR.I.M		
	O 515	KTC3199/GL/-T	TRANSISTOR		
	O 516	KTA1267/YG/-T	TRANSISTOR		
	O 517	KTC3199/GL/-T	TRANSISTOR		
	O 518	KRA111M-T	D.TR.I.M		
	O 519	KRA111M-T	D.TR.I.M		
	O 520	2SK105/EF/-T	TRANSISTOR(FET)		
	O 521	2SK105/EF/-T	TRANSISTOR(FET)		
	O 522	KTC3199/GL/-T	TRANSISTOR		
	O 523	KRA104M-T	D.TR.I.M		
	R 100	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 102	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 104	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 106	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 108	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 110	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 112	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 113	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 114	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 115	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 116	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 118	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 119	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 121	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 122	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 123	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 124	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
	R 130	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 132	QRE141J-123Y	C RESISTOR	12K 5% 1/4W	
	R 133	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 134	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 135	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 136	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 137	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 138	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 139	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 500	QRE141J-392Y	C RESISTOR	3.9K 5% 1/4W	
	R 501	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
	R 502	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 504	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 505	QRE141J-392Y	C RESISTOR	3.9K 5% 1/4W	
	R 506	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
	R 507	QRE141J-392Y	C RESISTOR	3.9K 5% 1/4W	
	R 508	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
	R 509	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 510	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 511	QRE141J-392Y	C RESISTOR	3.9K 5% 1/4W	
	R 512	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
	R 513	QRE141J-392Y	C RESISTOR	3.9K 5% 1/4W	
	R 514	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	

⚠	Item	Parts number	Parts name	Remarks	Area
	R 515	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 516	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
⚠	R 517	QRZ9005-100X	F.RES I/M	10 1/0W	
	R 518	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 519	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
⚠	R 520	QRZ9005-100X	F.RES I/M	10 1/0W	
	R 521	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 522	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 523	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 524	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 525	QRL012J-271	UNF OMF.RES	270 5% 1/1W	
	R 526	QRE141J-122Y	C RESISTOR	1.2K 5% 1/4W	
	R 527	QRE141J-331Y	C RESISTOR	330 5% 1/4W	
	R 528	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 529	QRE141J-753Y	C RESISTOR	75K 5% 1/4W	
	R 530	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 531	QRE141J-753Y	C RESISTOR	75K 5% 1/4W	
	R 532	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
	R 533	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 534	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 535	QRE141J-224Y	C RESISTOR	220K 5% 1/4W	
⚠	R 536	QRZ9006-4R7X	F RESISTOR	4.7 1/0W	
	R 537	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 538	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 539	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 540	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 541	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
	R 542	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
	R 543	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 544	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 545	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 546	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 547	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 548	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 549	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 550	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 551	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 552	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 553	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 554	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 555	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 556	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 557	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 558	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 559	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 560	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 561	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 562	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 563	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 564	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 565	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 566	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 567	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 568	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 570	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	S 100	QSW0834-001	PUSH SW		
	VR100	QVQ0021-B14	V.RES		
	Z 500	QNG0020-001Z	FUSE CLIP		
	Z 501	QNG0020-001Z	FUSE CLIP		
	Z 502	QNG0020-001Z	FUSE CLIP		
	Z 503	QNG0020-001Z	FUSE CLIP		

■ **Electrical parts list (SP-THA9 Sub board)** **Block No. 07**

⚠	Item	Parts number	Parts name	Remarks	Area
	C 202	QETN1HM-105Z	E CAPACITOR	1.0MF 20% 50V	
	C 203	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 204	QFVF1HJ-184Z	MF CAPACITOR	.18MF 5% 50V	
	C 205	QFN31HJ-393Z	M CAPACITOR	.039MF 5% 50V	
	C 206	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 207	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 208	QETN1HM-475Z	E CAPACITOR	4.7MF 20% 50V	
	C 209	QFN31HJ-471Z	M.CAPA. I.M	470PF 5% 50V	
	C 210	QTE1H06-475Z	E CAPACITOR		
	C 211	QETN1HM-106Z	E CAPACITOR	10MF 20% 50V	
	C 212	QETN1HM-107Z	E CAPACITOR	100MF 20% 50V	
	C 213	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 214	QETN1HM-476Z	E CAPACITOR	47MF 20% 50V	
	C 215	QCS31HJ-3R0Z	C CAPACITOR	3.0PF 5% 50V	
	C 216	QETN1HM-475Z	E CAPACITOR	4.7MF 20% 50V	
	C 217	QETN1HM-475Z	E CAPACITOR	4.7MF 20% 50V	
	C 218	QFVF1HJ-224Z	MF CAPACITOR	.22MF 5% 50V	
	C 219	QFVF1HJ-224Z	MF CAPACITOR	.22MF 5% 50V	
	C 223	QCSB1HJ-100Y	C CAPACITOR	10PF 5% 50V	
	C 225	QETN2AM-226Z	E CAPA I/M	22MF 20% 100V	
	C 226	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 227	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 228	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 229	QFN31HJ-223Z	M CAPACITOR	.022MF 5% 50V	
	C 230	QFN31HJ-223Z	M CAPACITOR	.022MF 5% 50V	
	C 231	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 232	QETN1HM-475Z	E CAPACITOR	4.7MF 20% 50V	
	C 233	QFV61HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 300	QFN31HJ-471Z	M.CAPA. I.M	470PF 5% 50V	
	C 301	QETN1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
	C 302	QCBB1HK-221Y	C CAPACITOR	220PF 10% 50V	
	C 303	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 304	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 305	QETN1HM-106Z	E CAPACITOR	10MF 20% 50V	
	C 306	QCSB1HK-3R3Y	C CAPACITOR	3.3PF 10% 50V	
	C 307	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 308	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 309	QETN1HM-106Z	E CAPACITOR	10MF 20% 50V	
	C 310	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 311	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 312	QCBB1HK-221Y	C CAPACITOR	220PF 10% 50V	
	C 313	QETN1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
	C 314	QFN31HJ-471Z	M.CAPA. I.M	470PF 5% 50V	
	C 315	QCSB1HK-3R3Y	C CAPACITOR	3.3PF 10% 50V	
	C 316	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 317	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 318	QFN31HJ-471Z	M.CAPA. I.M	470PF 5% 50V	
	C 319	QTE1H06-475Z	E CAPACITOR		
	C 320	QCBB1HK-221Y	C CAPACITOR	220PF 10% 50V	
	C 321	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 322	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 323	QCSB1HK-3R3Y	C CAPACITOR	3.3PF 10% 50V	
	C 324	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 325	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 326	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 327	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 328	QCBB1HK-221Y	C CAPACITOR	220PF 10% 50V	
	C 329	QTE1H06-475Z	E CAPACITOR		
	C 330	QFN31HJ-471Z	M.CAPA. I.M	470PF 5% 50V	
	C 331	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 332	QCSB1HK-3R3Y	C CAPACITOR	3.3PF 10% 50V	
	C 333	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 334	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 335	QFN31HJ-471Z	M.CAPA. I.M	470PF 5% 50V	
	C 336	QTE1H06-475Z	E CAPACITOR		
	C 337	QCBB1HK-221Y	C CAPACITOR	220PF 10% 50V	
	C 338	QCSB1HK-3R3Y	C CAPACITOR	3.3PF 10% 50V	
	C 339	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 340	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 350	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 351	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 352	QFN31HJ-472Z	M CAPACITOR	4700PF 5% 50V	
	C 353	QFN31HJ-472Z	M CAPACITOR	4700PF 5% 50V	
⚠	C 400	QCZ9105-472	C.CAPACITOR	4700PF	
	C 402	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 403	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 404	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 405	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 406	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 407	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 408	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 409	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 410	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 411	QFVF1HJ-104Z	MF CAPACITOR	.10MF 5% 50V	
	C 412	QETN1HM-105Z	E CAPACITOR	1.0MF 20% 50V	
	CN102	QGB2510K2-06	CONNECTOR		
	CN103	QGB2510K2-14	CONNECTOR		
	CN105	QGB2510K2-20	SOCKET		
	CN106	QGB2510K2-14	CONNECTOR		
	CN107	QGA7901C1-02	CONNECTOR		
	CN108	QGA7901C1-02	CONNECTOR		
	CN109	QGA3901F2-04	CONNECTOR		
	CN110	QGB2510K2-10	CONNECTOR		
	CN111	QGB2510K2-12	CONNECTOR		
	D 202	1SS133-T2	SI DIODE		
	D 203	1SS133-T2	SI DIODE		
	D 204	1N5402M-20	DIODE		
	D 205	MTZJ15C-T2	Z DIODE		
	D 206	MTZJ6.2B-T2	ZENER DIODE		
	D 207	1SS133-T2	SI DIODE		
	D 208	SLR-325MG-T	LED I M		
	D 209	SLR-325MG-T	LED I M		
	D 210	1SS133-T2	SI DIODE		
	D 211	1SS133-T2	SI DIODE		
	D 212	MTZJ6.2B-T2	ZENER DIODE		
	D 214	MTZJ15C-T2	Z DIODE		
	D 215	1N5402M-20	DIODE		
	D 216	1SS133-T2	SI DIODE		
	D 217	MTZJ6.2B-T2	ZENER DIODE		
	D 218	1SS133-T2	SI DIODE		
	D 219	1SS133-T2	SI DIODE		
	D 300	1SS133-T2	SI DIODE		
	D 301	1SS133-T2	SI DIODE		
	D 302	1SS133-T2	SI DIODE		
	D 303	1SS133-T2	SI DIODE		
	D 304	1SS133-T2	SI DIODE		
	D 400	1SS133-T2	SI DIODE		
	D 401	1SR35-400A-T5	DIODE		
	IC104	BA15218N	IC		
⚠	IC105	STK404-130	IC		
⚠	IC106	STK402-030	IC		
⚠	IC107	STK402-230	IC		
	IC201	BA15218N	IC		
	IC202	BA15218N	IC		
	J 101	QNB0065-002	SPK TERMINAL		
	J 102	QNB0070-002	SPK TERMINAL		

■ **Electrical parts list (SP-THA9 Sub board)** **Block No. 07**

⚠	Item	Parts number	Parts name	Remarks	Area
	L 200	QQLZ003-1R0	INDUCTOR		
	L 300	QQLZ003-1R0	INDUCTOR		
	L 301	QQLZ003-1R0	INDUCTOR		
	L 302	QQLZ003-1R0	INDUCTOR		
	L 303	QQLZ003-1R0	INDUCTOR		
	L 304	QQLZ003-1R0	INDUCTOR		
	LC400	QQR0797-002	INDUCTOR		
	LC401	QQR0797-002	INDUCTOR		
	LC402	QQLZ005-R45	INDUCTOR		
	LC403	QQLZ005-R45	INDUCTOR		
	LC404	QQLZ005-R45	INDUCTOR		
	MR200	QRZ0197-R22	EMIT.RESISTOR	1/1W	
	O 202	2SA1038S/SE/-T	TRANSISTOR		
⚠	O 204	2SK2937	FET		
	O 205	KRA111M-T	D.TR.I.M		
	O 206	2SC2389S/SE/-T	TRANSISTOR		
	O 207	2SA1038S/SE/-T	TRANSISTOR		
⚠	O 208	2SK2937	FET		
	O 209	2SC2389S/SE/-T	TRANSISTOR		
	O 210	2SK105/EF/-T	TRANSISTOR(FET)		
	O 211	KRC111M-T	TR I/M		
	O 300	KTA1267/YG/-T	TRANSISTOR		
	O 301	KTA1267/YG/-T	TRANSISTOR		
	O 302	KTA1267/YG/-T	TRANSISTOR		
	O 303	KTA1267/YG/-T	TRANSISTOR		
	O 304	KTA1267/YG/-T	TRANSISTOR		
	R 200	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 201	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 208	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 209	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
	R 210	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 211	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 212	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 213	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 214	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 215	QRE141J-392Y	C RESISTOR	3.9K 5% 1/4W	
	R 216	QRE141J-182Y	C RESISTOR	1.8K 5% 1/4W	
	R 217	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
⚠	R 218	QRZ9015-221X	F.RES I/M	220 1/0W	
⚠	R 219	QRZ9015-221X	F.RES I/M	220 1/0W	
	R 220	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 221	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 222	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
	R 223	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 224	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 225	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
	R 226	QRK126J-4R7X	C RESISTOR	4.7 5% 1/2W	
	R 227	QRE141J-4R7Y	C RESISTOR	4.7 5% 1/4W	
	R 230	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 231	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 235	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 236	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 237	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 238	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 239	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
	R 240	QRE141J-823Y	C RESISTOR	82K 5% 1/4W	
	R 241	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 242	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 243	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 244	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 245	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
	R 246	QRE141J-823Y	C RESISTOR	82K 5% 1/4W	
	R 247	QRE141J-394Y	C RESISTOR	390K 5% 1/4W	

⚠	Item	Parts number	Parts name	Remarks	Area
	R 248	QRE141J-334Y	C RESISTOR	330K 5% 1/4W	
	R 249	QRE141J-475Y	C RESISTOR	4.7M 5% 1/4W	
	R 250	QRE141J-475Y	C RESISTOR	4.7M 5% 1/4W	
	R 251	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 252	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 253	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 254	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 255	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 256	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 257	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 258	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 259	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 260	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 261	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 262	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 263	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 264	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 265	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 266	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 267	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 268	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 269	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 270	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 271	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 272	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 273	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 274	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 275	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 276	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 277	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 300	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 301	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
	R 302	QRE141J-182Y	C RESISTOR	1.8K 5% 1/4W	
⚠	R 303	QRZ9015-101X	F.RES I/M	100 1/0W	
	R 304	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 305	QRT012J-R22	UNF.MF.RES.	5% 1/1W	
	R 306	QRT012J-R22	UNF.MF.RES.	5% 1/1W	
	R 307	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
	R 308	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 309	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
	R 310	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 311	QRK126J-4R7X	C RESISTOR	4.7 5% 1/2W	
	R 312	QRE141J-8R2Y	C RESISTOR	8.2 5% 1/4W	
	R 313	QRT012J-R22	UNF.MF.RES.	5% 1/1W	
	R 314	QRT012J-R22	UNF.MF.RES.	5% 1/1W	
⚠	R 315	QRZ9015-101X	F.RES I/M	100 1/0W	
	R 316	QRE141J-182Y	C RESISTOR	1.8K 5% 1/4W	
	R 317	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
	R 318	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 319	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
	R 320	QRK126J-4R7X	C RESISTOR	4.7 5% 1/2W	
	R 321	QRE141J-8R2Y	C RESISTOR	8.2 5% 1/4W	
	R 322	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 323	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 324	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
	R 325	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 326	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
	R 327	QRE141J-182Y	C RESISTOR	1.8K 5% 1/4W	
⚠	R 328	QRZ9015-101X	F.RES I/M	100 1/0W	
	R 329	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 330	QRT012J-R22	UNF.MF.RES.	5% 1/1W	
	R 331	QRT012J-R22	UNF.MF.RES.	5% 1/1W	
	R 332	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	

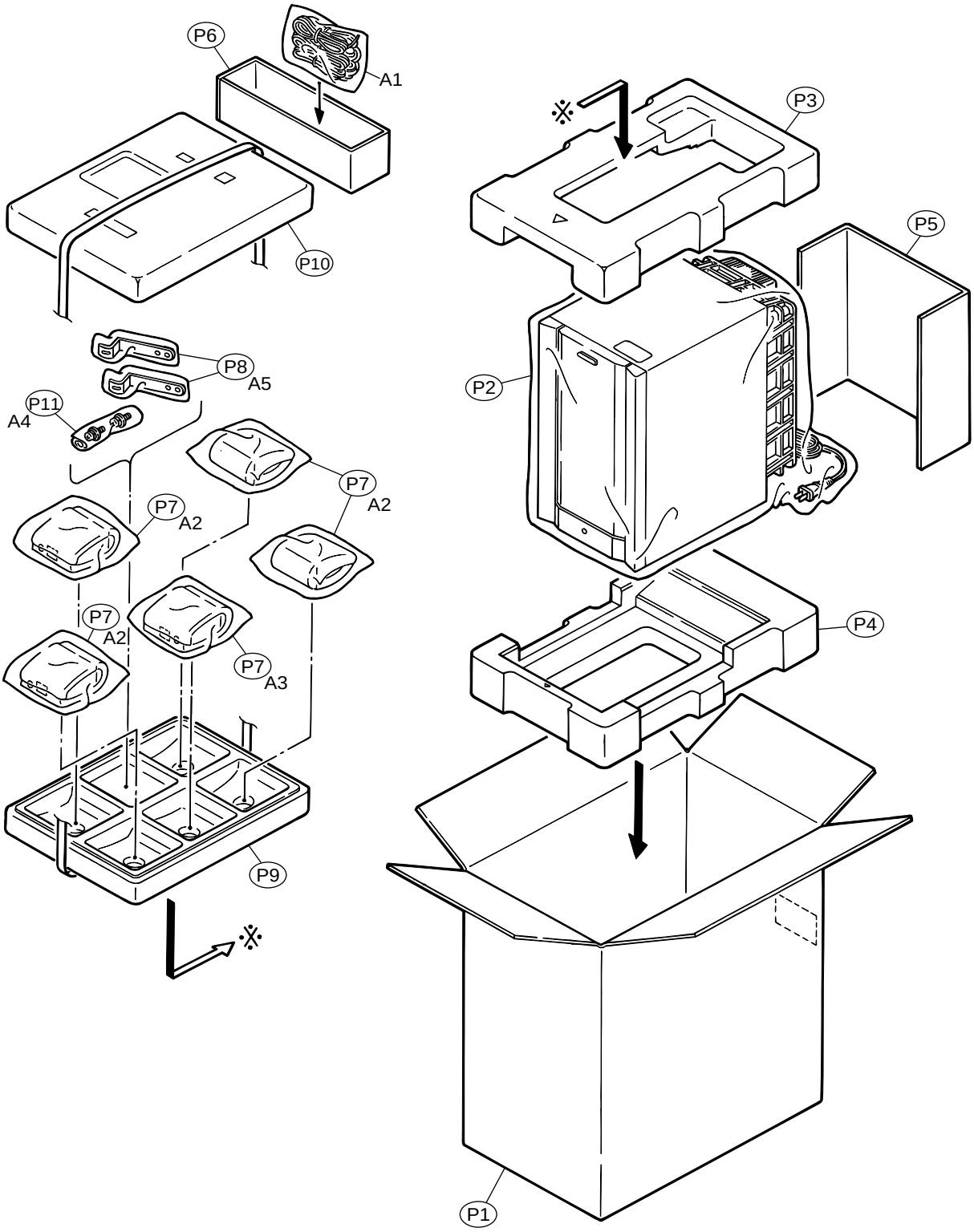
■ **Electrical parts list (SP-THA9 Sub board)** **Block No. 07**

⚠	Item	Parts number	Parts name	Remarks	Area
	R 333	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 334	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
	R 335	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 336	QRK126J-4R7X	C RESISTOR	4.7 5% 1/2W	
	R 337	QRE141J-8R2Y	C RESISTOR	8.2 5% 1/4W	
	R 338	QRT012J-R22	UNF.MF.RES.	5% 1/1W	
	R 339	QRT012J-R22	UNF.MF.RES.	5% 1/1W	
⚠	R 340	QRZ9015-101X	F.RES I/M	100 1/0W	
	R 341	QRE141J-182Y	C RESISTOR	1.8K 5% 1/4W	
	R 342	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
	R 343	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 344	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
	R 345	QRK126J-4R7X	C RESISTOR	4.7 5% 1/2W	
	R 346	QRE141J-8R2Y	C RESISTOR	8.2 5% 1/4W	
	R 347	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 348	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
	R 349	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 350	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 351	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
	R 352	QRE141J-182Y	C RESISTOR	1.8K 5% 1/4W	
	R 353	QRT012J-R22	UNF.MF.RES.	5% 1/1W	
	R 354	QRT012J-R22	UNF.MF.RES.	5% 1/1W	
	R 355	QRE141J-563Y	C RESISTOR	56K 5% 1/4W	
	R 356	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 357	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
	R 358	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 359	QRK126J-4R7X	C RESISTOR	4.7 5% 1/2W	
	R 360	QRE141J-8R2Y	C RESISTOR	8.2 5% 1/4W	
	R 370	QRE141J-152Y	C RESISTOR	1.5K 5% 1/4W	
	R 371	QRE141J-152Y	C RESISTOR	1.5K 5% 1/4W	
	R 372	QRE141J-202Y	C RESISTOR	2.0K 5% 1/4W	
	R 373	QRE141J-152Y	C RESISTOR	1.5K 5% 1/4W	
	R 374	QRE141J-202Y	C RESISTOR	2.0K 5% 1/4W	
	R 375	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
	R 376	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
	R 377	QRE141J-562Y	C RESISTOR	5.6K 5% 1/4W	
	R 378	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
	R 379	QRE141J-562Y	C RESISTOR	5.6K 5% 1/4W	
	R 380	QRE141J-681Y	C RESISTOR	FOR B3106	
	R 381	QRE141J-681Y	C RESISTOR	FOR B3107	
	R 400	QRE141J-8R2Y	C RESISTOR	8.2 5% 1/4W	
	R 401	QRE141J-8R2Y	C RESISTOR	8.2 5% 1/4W	
	R 402	QRE141J-8R2Y	C RESISTOR	8.2 5% 1/4W	
	R 403	QRE141J-8R2Y	C RESISTOR	8.2 5% 1/4W	
	R 404	QRE141J-8R2Y	C RESISTOR	8.2 5% 1/4W	
⚠	RY400	QSK0055-001	RELAY		
	RY401	QSK0109-001	RELAY		
	RY402	QSK0109-001	RELAY		
	RY403	QSK0109-001	RELAY		
⚠	Z 400	QNG0020-001Z	FUSE CLIP		
⚠	Z 401	QNG0020-001Z	FUSE CLIP		

< MEMO >

Packing materials and accessories parts list

Block No. M 6 M M
Block No. M 7 M M



■ Parts list (Packing)

Block No. M6MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	P 1	LV32243-002A	CARTON	1		
	P 2	QPA08009005P	POLY BAG	1		
	P 3	LV20900-001A	PACKING PAD	1		
	P 4	LV20900-002A	PACKING PAD	1		
	P 5	LV42058-001A	CARTON SHEET	1		
	P 6	LV42059-002A	CARTON SHEET	1		
	P 7	8500032771	POLY BAG	5		
	P 8	8500035701	POLY BAG	2		
	P 9	8000044311	CUSHION(BOTTOM)	1		
	P 10	8000044301	CUSHION(TOP)	1		
	P 11	8500035721	POLY BAG	1		

■ Parts list (Accessories)

Block No. M7MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	A 1	LV42296-002A	SPK CORD ASSY	1		
	A 2	SP-XSA9E	SPEAKER BOX	1		
	A 3	SP-XCA9E	SPEAKER BOX	1		
	A 4	7200035911	BOLT	2		
	A 5	6400020001	BRACKET	2		